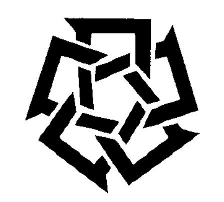


The American University in Cairo
Office of Graduate Studies and Research

Impact of Information Technology on Education & Research

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The AUC Research Conference was first held in 1993 to provide a forum for AUC faculty and a selected number of graduate students to discuss research issues of common interest. The conference is also intended to introduce the outside community to the research activities at AUC, with the objective of strengthening the relationship between the University and other organizations in the region, and encouraging multi-institutional collaboration. The titles and dates of previous conferences were:

- First Conference:
  "Networking Egyptian Development: An Interdisciplinary Approach" - December 18, 1993

- Second Conference:
  "Environmental Protection for Sustainable Development" - March 25-26, 1995

- Third Conference:
  "Sustainable Development in Egypt: Current and Emerging Challenges" - April 21-22, 1996

- Fourth Conference:
  "Development and the Environment: Obligations to Future Generations"- April 6-7, 1997

- Fifth Conference:
  "Globalization: Blessing or Curse?" - March 29-30, 1998

- Sixth Conference:
  "Human Development for the 21st Century" - March 21-22, 1999

- Seventh Conference:
  "Research and Education in Egypt: A Millennial Assessment" - April 16-17, 2000

- Eighth Conference:
  "Information Technology in Egypt: Challenges & Impact" - April 1-2, 2001

The annual AUC Research Conference is sponsored by the Office of the Provost and is organized by the Office of Graduate Studies and Research under the direction of the Research Advisory Council.

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Institutionalizing Synergy: Empowering the Learning Community through ICT *

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Panel Members: Drs. Samy El Akabawy (MGMT) and Associate Vice President for Computing; Dan Tschirgi (POLS); Mark A. Peterson (SAPE); and Mr. Jonathan Hill, ICT Coordinator (HUSS)

> Synergy is the fruit of thinking win-win and seeking first to understand. It's not compromise. It's the creation of third alternatives that are genuinely better than solutions individuals could ever come up with on their own.
>
> Steven R. Covey, Ph.D.
> Co-chairman of FranklinCovey Company
> (The largest management and
> leadership development organization
> in the world.)[1]

The acceleration of change in our time has become an elemental force. This accelerative thrust has personal, psychological and sociological consequences. Unless people quickly learn to control the rate of change in their personal and professional affairs, as well as society at large, mankind is doomed to a massive adaptational breakdown.[2] Empowering the learning community of the academy through Information and Communication Technology (ICT) is certainly a classic example!

The use of information and communications technologies is proceeding at a geometric rate. Only ten years ago, the first web page went on-line at Stanford University. Today, there are one-half billion web pages. Although the world's militaries and private corporations are both heavily invested in these technologies, educators and their students remain the backbone of innovation, both in terms of technology and applications.

The very success of ICT presents numerous opportunities for universities to excel. Unfortunately, all too often, participants tend to perceive these opportunities negatively as "problems." ICT use involves at least three loosely networked groups of people. Administrators are responsible for strategizing and funding. Support staff are responsible for implementing technology. The learning community itself, professors and their respective support staffs apply technologies to pedagogy in order to enhance the learning process, and correspondingly benefit students at all levels. In early stages of implementation, the network of administrators, support staff and users is small enough that they easily can interact with each other on an individual basis. However, as the network grows, organizational

barriers tend to arise. These include the establishment of institutional gatekeepers, misunderstandings due to lack of common language, and loss of mutual respect and trust. These barriers in turn exacerbate the very real constraints of time, money and energy (TME) including opportunity costs experienced by network members at all three levels.

Many of these aforementioned opportunities to excel are common to all systems. What is unique about ICT is the speed with which innovation occurs, and the need for rapid response by network members at all levels within the system. The rapidity of technological change combined with perpetually new applications only adds to the burdens of TME incurred by the various groups, including individual members. New innovative ways are required to recapture the lost synergy. Additionally, these new ways in all likelihood, will not require face-to-face interaction; since, such interaction is rendered practically impossible given the relatively large number of people involved in most ICT academic networks. To the contrary, the innovative changes will be manifested through new ways in which interpersonal dynamics among members of the three groups are institutionalized. Thus, the panel attempts to address some of the salient issues including: (1) early synergies and the inevitable "bureaucratic creep" of ICT; (2) the ICT system including administrators, technophobes, and users frequently comprised of technophiles and self-proclaimed informed users; (3) ICT system encumbrances and the need for periodic reality checks; and (4) institutionalizing synergy within the learning community of the academy through ICT. Conference participants should find the panel discussion both hard-hitting and entertaining, with plenty of opportunity for participant dialogue.

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[1] Stephen R. Covey, FranklinCovey Company [database on-line]; available from http://www.franklincovey.com/speakers/people/s_r_covey.html ; Internet; accessed 29 January 2002.

[2] Alvin Toffler, *Future Shock* (New York, NY: Random House, 1970).

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* Abstract only is published here

Illusions in the Age of Information Technology and its Educational Consequences

Dr. Ernest Wolf-Gazo,
Department of English & Comparative Literature,
Philosophy Unit

We live in an age of information technology. It is a kind of technology that enhances communication far and wide, from any spot of the globe, to anyone by anyone. The computer reigns supreme. It was especially in the 1990s that the computer turned into a tool for mass communications. Of course, the theoretical idea of the computer machine or calculator goes back to the philosopher-mathematician Leibniz. I doubt seriously that Leibniz could have envisioned the world of computer technology we live in today.

Electronic mail, the website and its audio-visual accompanied dimension has taken on a revolutionary way of communications. The introduction of the mobile phone added an individual touch to personal communications. Yet, what are the consequences for individuals, communities or whole societies? What are the educational consequences of such a revolution? In order to come to terms with such technological feat we must reflect on the deeper level of communications, not as technology, but as an aspect of the human condition. A sort of philosophical anthropology is needed to uncover the invisible elements of this communicative revolution. The task of uncovering these deeper structures and invisible elements means, first of all, to disclose illusions that emerged in the process of development of this information technology revolution.

Aspects of Illusions

I remember well my old classical Greek grammar book and its first lesson headed by a Greek proverb stating, "A Spade is a Spade and not another thing". Of course, as a beginning student I thought this proverb funny, even silly. Many decades later, the proverb embraced my memory, I smiled and realized the wisdom inherent in the proverb. Needless to say, a Greek farmer of old understood that sort of statement. In the information technology age that sort of proverb sounds suspicious. What exactly is something, not to mention another thing? Are not things that everyone sees, touches, tastes, hears and understands? Or, are things different from what they seem? We deal with reality better, empirical reality, or reality experienced. The Greek proverb holds basically that we experience the world in the same fashion. There may be some variance, but common sense tells us, that all in the same. Or, is it?

Illusions are antithetic to reality experienced. Yet, what happens if that reality experienced turns out to be an illusion itself? The audio-visual and virtual dimensions accompanying the computer world gives us ample hints as to how experienced reality can actually be illusioned. In the age of computer technology illusion and reality are inter-changeable. Where is the point of reference?

Let us take space and time: it is clear by now that there is no objective real entities such as space and time. Since Kant we know that space and time are forms of our perceptions and establish our very condition in which we experience the world. The world is empirically real, but, as Kant put it, transcendentally ideal. What exactly does this mean? It means that humankind can never go beyond our empirical condition. Mathematics and science are examples of such theoretical construction, not to mention our software computer program. We cannot claim to know absolute reality or knowledge. In fact, in Kantian terms we can say that virtual reality is our objective illusion of what we "perceive" as the world. With the age of computer technology illusions become objective. Our empirical world becomes, although a basic condition of being able to have access to the world, nevertheless, a part of our virtual environment. What remains really real? In fact, with the help of Kant, sociologist such as Giddens and Bauman, forunners of a postmodern sociology, recur to Kant in that they entertain the idea of space-time expansion and contraction. Society, with the help of computer technology, manufactures and refines its own idea of space and time. People who live in computer games have lost any objective reference to the empirical world. Computer games and other audio-visual tools promote illusions that become part of this space-time contraction and expansion. The introduction of objective illusion is part of the age of information technology.

"Seeing is Believing," or, Why There are so Many People Thoughtless?

The age of information technology, as we pointed out, produced objective illusions. It does more, it produces, en masse thoughtless people. Therein lies the danger of a society: people without thoughts, people who only use their eyes to see, actually do not see anything except objective illusions. "Seeing is believing" in the age of information technology turns fatal, because people are guided by objective illusions, that may turn into subjective disasters. Real people are killed, because they have been mistaken as objective illusions in terms of computer game figures.

Illusions of Power

The world of objective illusions turns into a dangerous game at the very moment when this objective illusion is mistaken for absolute power. The old fashioned marionette game is transformed into the manipulative world of virtual reality at your fingertips. Hitler turns virtual. The illusion of power is so alluring that the world of computer games are transformed into war games in which real people become collateral damage. This unseeming term, aenesthesized of its emotional content, insults the moral sense of any moral stand point. Illusions of power, as Nietzsche has taught us, knows no shame, honor, or fair play. It is power caught naked without clothing. Decorum, etiquette and politeness becomes unnecessary, because those who entertain the illusion of power have no need of criticized discourse. The computer screen will demonstrate very nicely the facts of objective illusions of power, expressed in quantitative fashion, without the niceties of small talk. The virtual smile of power is the object expression of an ugly face wanting to pass for being refined. Refined faces, embued with the objective illusion of power,

are the very faces that we see every day on television screens. The computer world and mass communications are not far behind. The rest turn into clowns and statisticians for the virtual emperors. And, we may ask in the age of information technology where are the real emperors? Who educates them? Or, do they need education at all? Plato's cave seems upside down: the shadows turn into objective illusions and even the sunlight no longer reaches the caves, because they are virtual. The new search for truth in the age of computer technology will be the search for a real sun. Yet, we may ask, do we still have the same eyesight of old. Virtual eyeglasses will do the rest. Night turns into day, and they call it, an advantage: for whom? For what?

Why is the Mobile Phone a Girl's Best Friend?

It is an open secret that the advent of the mobile phone was as important as the arrival of the so-called "anti-baby pill" in 1965. Both developments have something in common, namely, the emancipation of young women from their watchdogs.

So far the studies of the sociology of mobile phone usage has concentrated especially on young women in their teens and early twenties. The divorced women become a curiosity. Married people are hardly effected by the mobile phone and why should they? All is well in traditional world-land. The mobile phone individualized conversation and dislocates the traditional places of discourse: the home or the stationary telephone booth. It is no accident that the first question asked by parents is, "where are you?" Here the Kant-Giddens scheme operates: the sender and receiver of messages and calls can relocate in expanding and contracting the space-time environment. It is no longer possible to secure physical control or by perception the whereabouts of the well-defined location "reserved" for the young female. The mobile phone releases the angst and anxiety of those who once possessed the power of surveillance. "Home" is everywhere. "Home" becomes public. The young woman goes public in private disguise, her mobile phone, the illusion of control is gone and another chapter on freedom must be written. When morality is substituted for real achievement hypocracy can not be far behind. The petite bourgeoisie of the world unite to greet the grim faced Hitlers and their uprighteours supporters. The mobile phone made it possible to move from deception to the emancipation of young women for authentic discourse, without interference of the traditional prisonguards. Information technology provided the condition for such emancipation. In case of the young woman it is critical, in case of the rest of us, necessary.

Neurotic Personality and Compulsive Behavior at the Altar of the Computer

It is well known that computer usage, especially by the very young turns at times, into compulsive behavior. This is particularly true when we observe video game users and programmers. Very often neurotic personalities develop or are in the making. The idea of freedom, spontaneity and creativity is deconstructed. The compulsive behavior at the computer resembles an altar boy in church. The computer screen turns into a religious-like screen, made famous by James Joyce in his autobiographical Confessions of a Young Poet, that separates the sinner from his

confessor. Programming becomes an obsession like sin. Although the programmer may be aware of his sins, his compulsion drives him on and on, until his anxieties are relieved. Yet, another program projects awaits the neurotic personality. There is no room for common sense, only sense for non-sense. The area of psychiatric manifestations in terms of compulsive behavior in an information technology environment is still virgin land. Yet, the shooting of teachers and pupils, by other pupils, give us a hint of some very serious disorder developments of "the kids" in the information technology world.

Illusions of Security or the Reemergence of Dr. Strangelove

In the late 1960s students enjoyed a now famous movie about the security of nuclear weapons. There was a physicist by the name of Dr. Strangelove (played by Peter Sellars). He was a former Nazi who had worked for the Fuehrer's rocket V-2 program. Later, after the war, he worked for the US military and was obsessed with security and, Charlie Chaplin like situations of raising his hand to salute, in good Nazi style, his president. This was embarrassing to his Pentagon environment so that he tried to suppress his saluting arm. As soon as Dr. Strangelove spoke passionately about security he could not control his arm - it went straight out for the Nazi salute-Heil Presidente. Of course, for us 1960s students, it was hilarious and terribly comic, considering Peter Sellar's great performance. The sad news in our age is that information technology recalls Dr. Strangelove and the obsession with computer security. This time our good doctor battles the hackers. The illusion of total security becomes an obsession. Everyone in the computer world becomes Dr. Strangelove and those who do not, have no right to salute the President. They are those who get depressed. Obsession drives on acknowledgement of the powerful. Then they are those who are called bad names; instead of "Untermenschen" in Nazi slang, "inferior beings", they are named "computer illiterates". They are cast into nowhere and are considered dispensable and have no access to Strangelove's security network. That is their punishment, illiteracy, a term hijacked from literature proper, is especially used by those who are literary illiterates. Of course, in the information technology environment, who needs books, if Dr. Strangelove provides absolute security, despite his little idiosyncratic arm-saluting-the-boss.

Cybersex with the Marquis De Sade

I wonder if the Marquis were alive today what he would have to say about cybersex. Cybersex, the absolute illusion of sensual delights with a bad aftertaste. How is a philosophy of Boudoir possible in the information technology age? Does De Sades Juliette fit into the pornographic websites? Millions of people spent many hours involving themselves in the reality of unsatisfied eros. The websites are lucrative enterprises and the demand outstrips the supply. De Sade, the master of delightful descriptions of unconventional unions between peoples, would not find cybersex to his taste: it is far too graphic. A lack of the imagination rules cybersex. It is the obsession with the illusion of possessions, at least virtually that drives on (Trieb in Freud's term) the website visitor. Can we really compose the websites

boxes with the boudoirs of the 18th century? The development in erotic refinement, from the Kama Sutra via De Sade to white middle class Johnson and Masters statistical spiel of sexual achievement is astounding. We doubt seriously whether the irony in Horkheimer and Adorno's dialectic of Enlightenment is still adequate to describe the cybersex situation. The dialectic of illusion perhaps, but the eros is lost and reduced to simple virtual gratification. Yet, the hunt continues for the real thing, as the Greek proverb reminded us. Cybersex makes a mockery of the Kama Sutra and De Sade and turns the old fashioned idea of procreation into a farce.

Long Distance Learning or Education at a Distance

Distance learning, another product of the information technology age, is education without a face. Advocates of this sort of education do make a good case for some of its application. Rural areas, remote locations, people with full time job and others who might be disadvantaged can now receive some sort of education or training in various skills. The positive aspects of an education at a distance is not lost on us. Yet, how authentic is it really and to what extent is their a real development towards individuality? In the olden days it was conventional that pupils and their masters would interact daily in instruction, discussions, commenting, debating, tutoring and criticizing. It was a method of education practiced in medieval Latin colleges as well as in the Madrasas. The relationship between the master and his disciples was unique. Education was part of the relationship between the educator and his student. It was education with a face. The face had a personality and character. Later, the student would graduate by the fact that the master writes a piece of paper recommending his student's quality and endorse him to the next community which he would encounter to settle and start his own face-to-face educational journey. The scholars road could lead anywhere from Bukhara to Baghdad, from Cairo to Cordova, or Istanbul to Basra. Needless to say, this is much to be said for learning at a distance, but the lose of interaction and character formation (bildung in Goethe's German) is lost in such an enterprise.

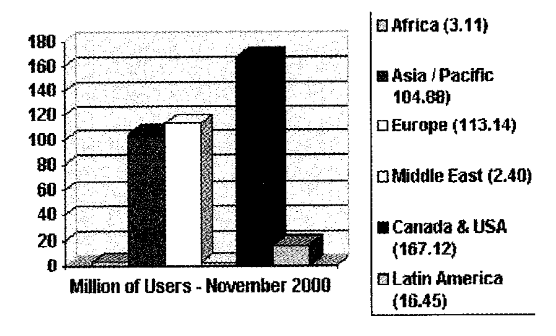
The Dissolution of the Truth

The problem of truth is yet another important item to be addressed in terms of the illusions of the information technology age. Truth is not sought for in computer technology, but fabricated affairs of objective illusions. The truth, capital "T", no longer exists in the information technology environment. The truth is no longer absolute in the computer box, truth has been reduced to functions for this and that. Virtual reality reduced the old fashioned ideas of truth to objective illusion. Truth become a subjective relative, a function as any other without special value. We no longer search for the truth, but are contend to let sleeping dogs sleep, and promote what the cultural authorized Clifford Geertz called local knowledge as truth. Truth in the information technology is not considered a global enterprise, but affairs of local concerns. That is the reason truth could never be universalized. Truth is relative to any other, the reason why the term truth is suspended. There are many little truth, some big lies, but the hunt for the truth is over. Illusions come and go, but the pain remains real. ■

Crossing the Digital Divide: Strategies and Implications

Ms. Martha Speirs Plettner, Library

The *Digital Divide* has been defined as "the gap between individuals, households, businesses and geographic areas at different socio-economic levels and their opportunities to access information and communications technologies". (Koss 77)



The global digital divide is a phenomenon which separates East from West and the fact that nearly 90 % of all Internet users are in industrialized countries, with the United States and Canada alone accounting for 57 % of the total, shows the extent of its existence today. In contrast, Internet users in Africa and the Middle East together account for only 1 % of all global Internet users. (ILO 2001) Less than 1% of the people in South Asia are online even though it is home to one-fifth of the world's population. Industrialized countries, with only 15% of the world's population, are home to 88% of all Internet users. (UNDP 1999)

Barely 6 % of the world's people have ever logged onto the Internet and 85 to 90 % of them are in the developed countries. (ILO 2001) This means that the remaining population in less developed countries is effectively invisible to the ICT revolution. The idea of providing equal accessibility to the digital world seems daunting given the fact that most of the people living in developing countries have never heard a dial tone, let alone sent an e-mail or downloaded information from the web. (Ulfelder 63)

Challenges to Internet Access

Tools necessary for crossing the digital divide and accessing the Internet include hardware and software as well as the cost of connecting to the Internet; an often significant on-going cost which is dependent on Internet service providers (ISPs) and their charges. Free ISP access is a growing trend, with projects like the Telecom Egypt's plan for free dial-up Internet access in Egypt being instituted in other developing countries especially those in Latin America. However, connectivity continues to be a considerable roadblock to many trying to enter the information super-highway.

The invisibility of the developing world is principally due to the lack of connectivity as the telecommunication infrastructure is uniformly poor or lacking in these areas. An ILO report has found that, "The level of national income is strongly related to ICT diffusion and is clearly the distinguishing feature of the divide between industrial and developing countries." (ILO 2001) The availability

of telecommunications therefore is not a consequence of development, but an empowering force behind it.

The Impact of the Digital Divide

As the Internet helps to create new ways of doing business and communicating it also creates a disparity between the haves and have-nots, perhaps faster and more significantly than any other movement in history. However, there are valid questions about its social relevance in the greater scheme of things and the priority that it should be given development concerns. There are those who ask what good information and communication technology does for this disenfranchised population. There are those who feel that "you can't drink a computer" and that water is a much more important issue for those suffering from this sort of inequality or disenfranchisement. (Roach 2001a) The answer to these concerns is that it is not a trade-off of either / or but that ICT offers solutions; solutions that aid by supplying information to support health, education, and enterprise efforts. It can boost efforts to address the complex and more profound problems of famine, AIDS, infant mortality, and war related relocation problems. It can also supply information which can help to encourage gender equality, education and self-sufficiency. Rodrigo Baggio, the founder of Committee to Democratize Information Technology based in believes that "the computer is more than a machine. It's a tool that can turn poor and underprivileged people into active citizens" (Koss 80). Nelson Mandela echoes this feeling when he advises that advances in ICT "should be geared towards enhancing global citizenship and global economic prosperity." (Mandela 1995) Technology alone is not a panacea and ICT is not a magic bullet, but it can be part of the solution.

An example of this sort of solution at work occurred in Ecuador where farmers were suffering from a pest that was destroying their potato crop. They could get no answers from their Ministry of Agriculture, but after an ICT project director helped them post a message about the problem online, they got suggestions of strategies they could adopt to eradicate the pest and found a solution that worked within a day. They were able to save their crop and consequently their livelihood. Technology stirs economic progress; it raises living standards and improves quality of life. (Ulfelder 65)

Another social impact of the consequences of the digital divide is the effect that the lack of access to reliable communication and information technologies (ICT) and the resulting feelings of disenfranchisement have had on global security risks. The inequality of access can be dangerous as it can encourage frustration and feelings of powerlessness. In Somalia the one main ISP, has been closed down along with all the existing Internet cafes because of fears that the terrorist Al Qaeda network was linked to the Somalia Internet Company and the related money transfer business al-Barakaat. This has had a devastating effect on the Somali people as more than 80% of them are dependant on money earned outside the country and transferred via this service. (Barise 1)

The idea of spreading democracy using technology and thereby fighting terrorism has also been bandied about. Freedom of communication just like

freedom of speech engenders democracy, which is one reason why totalitarian governments ban it. It has also been said that the frustration regarding lack of equality of access to the online world may have been a factor leading to the September 11 attacks. (Kirkpatrick 2)

The International Labour Organization report, Life at Work in the Information Economy, finds evidence of a higher level of Internet use where political and civil freedoms exist. (ILO 2001) On the other side of the coin, however, is the possibility that interconnectivity can bring with it opportunities to spread offensive ideologies and recruit followers, enable the transfer of illegal money, communicate about criminal dealings and encourage and enable the spread of pornography and gambling. Specific strategies will have to be developed to deal with these sorts of threats, as the spread of ICT is inevitable and there are clearly obvious benefits that come along with the risks that this access and interdependability allow.

What are some practical strategies for bringing about the benefits which come with ICT? How is this inequality currently being addressed and what are some strategies which empower people to cross this digital divide? What kind of bridge will we need to span this increasing divide, without allowing the smaller countries who cannot keep up with the effects of globalization to fall into the divide?

Tools which Empower

Hardware, software and connectivity are essential tools for entry onto the information highway. Because of the need for a small portable inexpensive device which would enable an affordable such entry, engineers in India designed the Simputer, a small hand-held micro-computer using the free open-source Linux operating system which sells for around $200. (Simputer 1) Refitted Sony Playstation consoles running Linux and Java and selling for around $300 are also relatively inexpensive ways to distribute hardware and enable more people to share in the world's information. The effort to distribute these devices which can utilize an 80 gigabyte hard disk is being led by 70 technology companies in the World Economic Forum. (Roach 1) The "Popular PC" or "Computador Popular" was developed by Brazil's Federal University of Minas Gervais. This device lacks a floppy or hard drive but has a 500MHz-equivalent processor, 64MB of RAM, an Ethernet card, a 56K modem, 14 inch monitor, sound and video cards, serial and USB ports, a mouse and a keyboard. Low-income households can purchase these for about $300. (Anderson 1) Shared devices that allow easy-to-use interfaces with sound, touch and audio are essential in order to reach all levels of the population in many cultures where literacy is still low.

Software is also an important factor in enablement. Free software sites are becoming more common. For example, Katim Touray has developed a website, FSDev.org specifically to provide this service to developing countries.(Touray 1) ITrainOnline is another site which offers resources and training specifically geared to developing societies. (ITrainOnline 1)

Connectivity can be increased by using mobile networks and satellites. Mobile networks can reach quickly into regions where fixed networks are slow to emerge and they can bypass the often highly regulated state-run telecommunications

monopolies. BusyInternet, an American-Ghanaian ISP based in Accra has avoided the country's infrastructure bottlenecks by putting in their own link to the national electricity grid, their own generator and a satellite dish for increased bandwidth. (Roach 39) The World Space Foundation also bypassed the insufficient available telecommunications infrastructure by providing digital satellite broadcasts which link special radios connected to both adapter cards in a PC and micro-dish receivers to geo-stationary satellites which were then connected to the Internet. This is helping those in the Arid Lands Information Network-Eastern Africa who lack telephone lines. (ALIN-EA 1) Increasing accessibility to satellite communication is clearly an effective and efficient way to leapfrog over the digital divide.

Leapfrogging

Technology leapfrogging is defined as "The implementation of a new and up-to-date technology in an application area where at least the previous version of that technology has not been deployed." (Davison 2) This leapfrogging is inevitable and something that happens automatically; for instance, no one being introduced to a computer today needs to understand punch cards or mainframes and latecomers to technological development are actually sometimes better placed than those using older technologies as they are not hindered by investments in obsolete technology that they are reluctant to abandon.

The environment surrounding the development of new technologies must be coordinated internationally while being geared to local and regional differences in implementation of educational, financial, and social philosophies and policies. For instance, telecenters where access is shared are not only more economically feasible but the concept of sharing oral literature, information and telephones, where they exist, is part of many developing countries cultures. A recent study by eMarketer in Brazil found that the nation is home to 40% of South America's Internet users even though only 5% of Brazilians actually have Internet access. (Anderson 1) Clearly there are many people sharing one Internet connection.

Regional distribution of hardware and software has taken place via the use of elephants to deliver hardware to support the Non-Formal Education Department's work in Chiang-Mai Province in Thailand. (CNN 1) Camels are being used for the Camel Mobile Library Service in Kenya (Tate 1) and Discovery Inc. is responsible for the development of Donkey-Drawn Electro-Communication Library Carts which carry solar TVs and VCRs in Zimbabwe. (Ifshin 3)

Efforts towards delivering the hardware and software and connecting populations to the Internet may be increasing but the factor that is even more important in this enabilization effort is that of how ICT will be integrated into the lives of those who had not been a part of the earlier technological revolutions. This effort is crucially important. The inequality in IT resources can be dealt with by various methods of supplying the hardware, software and communication needs but these measures in themselves do not solve other adaptation concerns. It is inevitable that ICT will spread to all regions of the globe, much as television and the telephone have, but the imposition of this new and potentially interactive technology opens up the question of post-digital literacy and that of the necessity for evaluation of

the information provided via the Internet.

Leapfrogging in literacy and the philosophical problems related to education are necessary in the same way it is necessary for the developing populations to leapfrog over DOS and 5 1/4 in. diskettes. They will also have to use the newer currently unfolding methodologies of engaging with the new technologies. For instance, it is no longer so crucial to know whether a person is right or left-handed since technology eliminates these differences, because both hands are now necessary to write on a keyboard. (Ferriero 58) An integrated approach is needed. You can put computers in all the schools, but you must also train the teachers in post-digital literacy. The social context for the introduction of ICT will have to be developed and a synergy between the new context and the technology must not be embedded to the detriment of the current society. (Davison 5) This paper does not intend to tackle the debate surrounding the concept of globalization or even the ethical dimensions of a seemingly Western imposition of technology into areas that have not yet adapted to this technology upgrade. The attempt here is to see how those willing to jump on the ICT bandwagon can be accommodated. Cultural values interact with technology in ways that give strong indicators of the degree of acceptance or rejection of programs and these patterns influence the speed of the social adaptation.

Post-digital Literacy

According to Paulo Freire, the great Brazilian philosopher-educator, literacy has always been seen as a positive value in the modern world as this ability to reflect and act allows human beings to fulfill their destiny. It allows one to act with intention upon the literate world, to allow one's inborn ontological vocation to lead to a new sense of dignity and happiness. (Freire 20) He has stated that literacy is a key to breaking a hidden cultural code—a key to a future which includes socio-economic benefits. Post-digital literacy, which is necessary after the introduction of ICTs into a society, further provides an additional key into a virtual world with unknown and expanding potential.

Literacy and education cannot be bypassed, as both are vital for reaping the greatest advantages from the emerging digital era. We need to leapfrog over some of the old educational philosophies since many of these only deal with ways to interact with older technologies using older methodologies, however, we do want to retain whatever traditional methods will still be applicable in the new digital world. The promotion of education, literacy in general, and digital literacy in particular, is a challenge facing all countries. (ILO 2001) New methods of education and literacy must go along with the technological leapfrogging that is taking place as educational reform is inseparable from social reform. (Finlay 61)

Paulo Freire states that consciousness is intentionality towards the world, the awareness that the world is not a massive presence to which one can only adapt but a scope or domain which takes shape as one acts upon it. Every human being is capable of critically engaging the world through "praxis" a dialectical unity of reflection and action. (Friere 13) So, when one engages in reflection, perhaps even upon interacting with a computer screen and mouse pad and then acts to trans-

forms the world—he/she is in effect "naming the world". (Friere 61) This is a humanizing activity where people are humanized via dialogical encounters as opposed to being educated using a "banking mentality" which begins with a false understanding of people as objects without the ability to reflect and act where a teacher, or even a computer, deposits information into the minds of passive receiving students much like you deposit money in a bank. They have information imposed upon them in an oppressive way which removes the ability for them to reflect and then act. (Freire 46-7) Following Freire's philosophy, the introduction of new technology must be handled in such a way that it is not seen to be an imposition but something that can be "named" and as such become part of the "world" of the learner.

The capacity to create knowledge rather than merely receive and remember it is affirmed in Sugata Mitra's Hole-in-the-Wall experiment which displays technology leapfrogging by placing some of the newest technological tools in the hands of barely literate Indian children. (Mitra 2002b 3) They grasped this technology by interacting using Mitra's "minimally invasive" educational technique. A computer was provided via a hole in the wall of the NIIT (National Institute of Information Technology) building which faces out on a well-used path leading to a public garbage dump and toilet area.(Mitra 2002a 1) The users who were attracted to this computer monitor were mainly the children who were not used to interacting with any type of technology and who had trouble finding pencils and paper to draw or write with. Mitra claims they achieved base level "computer literacy" defined as the ability to use the mouse, to point, to drag to drop to copy and to browse the Internet, almost instantly. Mitra feels that, "there ought to be a kind of learning where the learner decides what the outcomes should be, and how they should be met. As adults we often do that, but we don't expect our children to do that, and we often don't allow them to do that". (Mitra 2002b 2)

The adults who saw the computer wanted to know what was going on. They asked, "What's this thing for?" and they asked where the teacher was who was supposed to teach them. Mitra feels the teacher's job is very simple—it's to help the children ask the right questions and to facilitate. The bonus is the ability to employ Friere's concept of Conscientização (critical thinking) in order to effect change in one's world. Does this minimally invasive concept of letting subjects teach themselves amidst peer discussions work? This sort of experiment is clearly not a total solution but it may provide a clue in finding effective methods for the successful implementation and integration of post-digital literacy. Emilia Ferriero says that, "There are children who access written language through magic, a cognitively challenging magic and children who access written language through "basic skills" training. By and large, the former become readers, and the latter functional illiterates. (Ferriero 60) If Mitra's methods work they can be a pragmatic way of bringing a "cognitively challenging magic" to reality.

Both Paulo Freire and Sugata Mitra saw that once the tools of literacy and computer literacy opened the world, the future was boundless and they only needed to facilitate the learning by answering the questions that emerge.

Freire says that the educator must be "imbued with a profound trust in man and

the creative power of humankind. To achieve this he must be a partner of the students in his relations with them. A parallel can be drawn here with the experience that the famous former Afro-American slave Frederick Douglass had. His master said to his teacher "If you teach that nigger how to read the Bible there will be no keeping him". Well, Douglass did learn to read and indeed he was not kept but entered public discourse with a vengeance. (Finlay 69) Perhaps the same thing can happen to these children of Kalkaji who learn by using the Hole-in-the-Wall and others around the world who approach this new frontier enabled by ICT advances and post-digital literacy methodologies.

Responding to change is extremely important for the survival of humankind. This applies to the effort to close the divide. It will widen if the appropriate strategies and applications are not implemented in a timely way. Then the group on the less privileged side of the divide will find it harder and harder to cross to the other side. We need to see strategies put into action post-digital literacy training, a kind that both Freire and Mitra would approve of, to take place using the current tools of technology.

We need to ensure that the divide between the haves and the have-nots does not become one of knows and know-nots. As Nelson Mandela once said, "If we cannot ensure that this global revolution creates a world-wide information society in which everyone has a stake and can play a part, then it will not have been a revolution at all." (Mandela 1)

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Politics, Paradox, Pitfalls and Promise of Distance Learning as an Augment to Egyptian College Classrooms: Lessons from the Western Governors University (WGU)

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This paper looks critically at the U.S. Western Governors University (WGU) as a distance learning model for Egypt, among other initiatives in the United States and elsewhere.

Distance learning proponents contend the technology can compress time and space for students in disparate places while critics allege a "virtual university" provides students with a virtual college experience devoid of quality interaction with classmates and professors. While the debate rages, policy makers around the planet are searching for ways to extend education beyond brick and mortar campuses into homes and community centers.

Under the American federalist model of governance, education at all levels is the responsibility of individual states and communities. Subnational governments in the United States on average spend 34.7 percent of their budgets on education at all levels, 8.9 percent on higher education. The federal government has never contributed more than 10 percent of the nation's total expenditures for education (Dye 1997:19-20).

Egypt's central government totally funds elementary, secondary or higher education in each of its 26 governorates (similar to states, but less sovereign), although many private schools and colleges are trending upward.

A relatively new initiative by 17 Western States Governors provides not only direct competition to a growing number of private distance learning companies but with their own state tax-supported systems to provide a post-secondary two-year degree. Could this effort serve as a model for Egypt? Or would some other model be more appropriate?

Post-secondary educators and administrators generally dislike the "messiness" of the political funding process, and eschew attempts by politicians to inject themselves in the pedagogical process. Grudgingly professors have accepted some attempts by lawmakers to make higher education more accountable to taxpayers and, in the case of AUC, its trustees: professor and class evaluations at the end of each semester is one step; tighter controls on university budgets and eventual tuition increases are another.

Unlike Egypt, states share the power to govern with and the central government. However, nearly all education decisions are made in 50 state capitals, and by over 8,000 locally elected boards of education—not in Washington, D.C..

With some exceptions such as federally mandated programs what is actually taught in the classroom is a state responsibility. The same is generally true with distance education.

While the legislatures and governors are responsible for provision and produc-

tion of education services in their states, most states act as centralized monitors for local school districts at the elementary-secondary level, and even less a monitor at the post-secondary level by establishments of citizen boards of higher education. School districts are considered a component of Dillon's Rule,[1] which means they are creations of the state. In that regard, the Egypt's governorates share that characteristic with the 17 states in the WGU.

Unlike Egypt, however, community colleges and universities have a great deal of autonomy from legislative actions under the aegis of "academic freedom." Their funding, however, still flows from state capitals. This Lasswellian concept of distributive theory results in a political struggle over who gets what money and why.[2] Casual observers might find Egypt's more opaque education system less politically motivated regarding allocation of financial resources.

The Western Governors Association (WGA) is a consortium of popularly elected governors who have organized to discuss common problems of those states west of the Mississippi River, which divides the country. One of these problems is geographic distances between cities, and a diverse geography, some of which resembles Egypt.

Figure 1 Comparison of land mass area of Egypt compared with WGU area

These wide-open spaces, though attractive to residents and tourists, are obstacles to commerce and governance. About the same number of people live in the area served by WGU as live in Egypt. Another common Western value shared by the governors is an inherent distrust of federal government initiatives that in the past have devolved programs to the states without accompanying funds to operate them.

Technology has been seen as a way to shrink distances, replacing spatial concerns with temporal ones, a death of distance, a creation of an electronic Pangaea (Cairncross 1997).[3] It also affirmed "the law of the possible," which

means that governments sometimes do things because they can (Volti 1995:13).

As an initiative spurred by Colorado Governor Roy Romer and Utah Governor Michael Leavitt, the Western Governors Conference in July 1996 established the WGU, which it was envisioned would "use appropriate advanced technologies and educational practices, provide expanded access to high-quality post-secondary education and training opportunities and competency assessment and skills certification, while taking advantage of cost- and resource-sharing opportunities throughout the West" (WGU Draft Memorandum 1996).

The WGU is built on two basic premises that diverge in fundamental ways from the traditional ideas of institutions of higher education (WGU 1996):

1. WGU will broker and market existing institutional programs, with emphasis on technology-based learning opportunities. Their preliminary product will be an online "navigator" of course and certification offers.
2. WGU will confer a two-year associate of arts degrees and other skills certification based solely on competency testing. The assessment will be independent of teacher evaluation of student progress.

The university has no campus, no dedicated faculty, no library and it is not an independent teaching institution. WGU offers courses in a variety of formats, including broadcast, tape and online (Miller 1996). Each state operates "learning access centers," which will be at an existing institution to provide academic counseling and access (WGU 1997a and WGU 1997b).

There was very little criticism at the state education level concerning formation of the WGU, partly because the state superintendents and commissioners (one is elected, the other appointed) were excluded from the policy decision process in this matter, and were outside the power loop.

Table 1 is useful in better understanding the political dynamics of the WGU from the political party perspective. The two major U.S. parties, the Democrats (Dems) and the Republicans (Rep), though weakened in national presidential elections, continue to be a force in state politics in determining state education policy (Beck 1997). This aspect probably puzzles most Egyptian educators since the country has a long tradition of one-party rule that extends back nearly two generations.

TABLE 1 Construct of WGU Education Establishment

States	Governor (All elected)	Party	Gov.'s Power*	How ed board selected	How ed chief selected	Control state house	Control state senate	Divided/ Unified R or D
Alaska	Tony Knowles	Rep.	Weak	Appoint	Agency	Rep	Rep	Unified-R
Arizona	Jane Dee Hull	Rep.	Weak	Elect	Appoint	Rep	Rep	Unified-R
California**	Gray Davis	Dem.	Strong	Elect	Board	Dem	Dem	Divided
Colorado	Bill Owens	Rep.	Strong	Board	Board	Rep	Rep	Unified-R
Guam	C.T.C. Gutierrez	Dem.	Weak	Board	Board	Dem	Dem	Unified-D
Hawaii	Ben Cayetano	Dem	Strong	Board	Board	Dem	Dem	Unified-D
Idaho	Dirk Kempthorne	Rep.	Weak	Elect	Board	Rep	Rep	Unified-R
Kansas**	Bill Graves	Rep.	Weak	Board	Board	Rep.	Rep.	Unified-R
Montana	Judy Martz	Rep.	Moderate	Elect	Board	Rep	Rep	Unified-R
Nebraska***	Mike Johanns	Rep.	Moderate	Board	Board	Rep	———	Divided
Nevada	Kenny Guinn	Rep.	Weak	Board	Board	Rep	Dem	Divided
New Mexico	Gary Johnson	Rep.	Weak	Appoint	Board	Dem	Dem	Divided
North Dakota	John Hoeven	Rep.	Weak	Elect	Board	Rep	Rep	Unified-R
Oklahoma	Frank Keating	Rep.	Weak	Elect	Board	Dem	Dem	Divided
Oregon	John Kitzhaber	Dem.	Weak	Elect	Board	Rep.	Rep.	Divided
South Dakota**	Wm. J. Janklow	Rep.	Weak	Elect	Board	Rep	Rep	Unified-R
Texas	Rick Perry	Rep.	Weak	Appoint	Appoint	Dem	Rep.	Divided
Utah	Mike Leavitt	Rep.	Moderate	Board	Board	Rep	Rep	Unified-R
Washington	Gary Locke	Dem.	Weak	Elect	Board	Rep	Rep	Divided
Wyoming	Jim Geringer	Rep.	Weak	Elect	Board	Rep	Rep	Unified-R

*"Power" is based on ability of governor to appoint department heads rather than having other members of his executive from different parties elected popularly or the executives are appointed by non-partisan boards. Sources: *Book of the States, 1997-98*; updated 4/2/2002 by author.
**Member of Western Governors Association but not a member of WGU.
***Nebraska has the only unicameral system in the United States.
Na=not available. Many superintendents run as non-partisan candidates, and information about their party affiliation is not readily available.

Of those states involved in WGU, Republican governors outnumber Democrats, 13-4; and Republicans outnumber Democrats in the state houses and senates, 12-5, and 11-5. In WGU initiative states, unified states barely outnumber divided states, 10-7. All but two Hawaii and Guam) are unified-Democrat members of WGU. The rest are unified-Republican.

WGU might well be a reflection of the education culture wars raging in the United States and an attempt by the governors to retain control of the higher education policy agenda.

The mistrust between political leaders and educators has a long lineage. Some of that distrust goes to the heart of what is and what is not a liberal education. Educators seem to resent the state's statutory power of legislators to reward, control or punish higher education institutions by giving or withholding funding. The basic disagreement seems to be a mutual distrust of motives between those who control the purse strings and those who want access to the purse.

Public demand for education from state colleges and universities has grown considerably from the GI-Bill days of post-WWII 1947, when half of all college students were enrolled in state institutions, to over 80 percent in 1990. Yet, in 1991, despite increasing demands before of enrollment increases, state half the states cut higher-education funding. (Saffell and Basehart 1998:275-7). In 1998, college enrollment was estimated by *The Chronicle of Higher Education* at 14.3 million students, 78 percent of them in publicly supported four- and two-year institutions. (1998). U.S. Department of Education statistics estimate enrollments will hit 20 million by 2010, nearly 16 million of them in public institutions. (AAUP 1997, *Chronicle of Higher Education Almanac* 1998).

The need to provide education services coupled with the increasing pressure from the education establishment for more funding[4] while at the same time demanding a greater say in education policy, greater protection of academic speech (that academia determined what was and was not appropriate, leading to the "politically correct" speech movement), and the whole issue of tenure), and greater self-governance within the universities itself by faculty.[5]

Hutchins (1976:27) warned that "love of money" was damaging the higher purpose of education, which, he asserted, should be left to the academics, for fear of the emergence of the "strangest of modern phenomena, an anti-intellectual university." [6] The sentiment was echoed by David Schuman:

> If our public institutions are, as we are told, open and accountable, and if liberalism is, as we are told, the natural home of diversity, then there is no reason to believe that people who are educated in different ways, with differing viewpoints, will be doomed to failure. We have gotten where we are today—over-organized and personally without power—in part because of the way we have been educated (Schuman 1982:240).

Disturbing trends in American education emerged in the 1970's and 1980's that alarmed state decision makers and the American public. Declining standardized test scores, performance testing for students, and competency tests for teachers all added to the growing rift between the education establishment and politicians. (Saffell and Basehart 1998: 275-276 and Dye 1997: 430-31).

Spurred by the "reinvent" movement,[7] the states moved toward a variety of experiments: parental choice, school-based management; magnet schools, charter schools, privatized public schools, educational vouchers and distance learning. The ripple effect eventually reached higher education.

Charles Mahtesian saw the reactionary response of state governments to education as a way of reining in institutions the lawmakers fully did not understand or appreciate. Or as one Ohio lawmaker put it:

> The higher education community thinks they're above it all. They don't like to be told what to do. But if they want us to be their sugar daddy, there are going to be some rules. (Mahtesian 1996:246).

As Kingdon points out there are visible and hidden participants (1995:199-200). Governors Romer and Leavitt were the visible participants in the policy decision that eventually affected the decision to create the WGU. The visible participants set the agenda, while the hidden participants (in this case a selective group of low-profile educators, specialists and technocrats) set the policy alternatives.

> So the chances of a subject rising on a governmental agenda are enhanced if that subject is pushed by participants in the visible cluster ... (Kingdon 1995:199)

WGU was funded with contributions of $100,000 from participating states ($1.8 million a year); $500,000 from the Alfred P. Sloan Foundation; $2.2 million from other sources, mostly high-tech businesses; (WGU Newsletter 5: 1997; *Rocky Mountain News* 1998). WGU estimated in 1998 it needed $6.5 million to "throw the switch" on distance learning (Dillon 1998).

At a1998conference in Salt Lake City, Gov. Leavitt said he expected "a competitive train wreck" along the way to the virtual university and admitted he is spending "time allaying fears" about WGU from academia. A reporter writing about the conference concluded: "Consternation from educators seems to be escalating on the topic of virtual learning" (Dillon 1998:1B).

A study of 1,200 "partnership" arrangements by Wilbur and Lambert (1990) found a "fickle romance" between universities and other public institutions involved in technology and distance learning. The most successful projects had been those in which both parties planned and prepared themselves well before starting the partnership. Adequate resources had to be allocated, and mutual respect between the partners was consciously and systematically nurtured. Among the findings, which Egyptian education planners might find useful in avoiding of the WGU pitfalls:

- Project goals should be jointly conceived and agreed upon.
- If teachers are to be involved as equal partners, they must be involved for as much time as the other actors.
- Education should be mutual; each party must develop an appreciation of the other's contribution.
- Leadership should rotate among partners as appropriate to their skills.
- Outcomes should be mutually owned.
- The university must be committed to the collaborative ideal and provide financial support if necessary, including stipends or load credit for faculty members.

A frequent claim is that distance education is cheaper, and, therefore, more useful in times of resource shortages. In reality, the cost equation is rarely that simple. Although the college may need less in the way of buildings and campus infrastructure, there will be a need for communication technology infrastructures, support networks, supplementary services for marketing, registration, library access, advising and testing beyond the campus. Cost savings may only be realized when numbers become large so that a program might have several hundred enrollees. By 2001, WGU was offering 939 different courses and had grown beyond its original boundaries by serving students in 44 states and five countries delivered via satellite (live and tape). A popular feature are Internet lesson plans and face-to-face meetings with facilitators (usually graduate assistants) at educational facilities near the students. WGU is looking at an eventual enrollment of 45,000.

The bottom line is that distance learning development requires significant changes in the practice of both faculty and students to ensure an adequate learning environment. The better distance learning program designs show sensitivity to students' need to have ready communication back to the instructor and to other students. (AAUP 1997:6)

Perelman (1992) suggests at least three overlapping categories of changes are taking place in this move toward technology-based education: additions to the curriculum, notably, instruction about information itself and the technologies of information; changes in the content of the traditional curriculum; and changes in the structure of the curriculum and the style of classroom instruction. Perelman, a noted author and specialist in educational policy, calls for the most revolutionary changes in the educational process. The new technology, he says has "blown the social role of learning completely inside out." (22).

Other Models for Egypt

Though WGU has assumed the high political profile, it is by no means the only model for Egypt to emulate in the distance-learning field. In fact, WGU's political fragile structure probably would not work in Egypt. Here are a few other types of distance learning institutions that Egyptian decision makers might find worthy of study.

Phoenix University was one of the first, private for-profit universities to relocate in cities and offer degree programs over the Internet. Like CACE at AUC, the courses are vigorously advertised and marketed.

With about 25,000 full-time students in 1998, PU was about the size of a flagship state college (Kruger 1998:30). Established in 1976, PU is a brick-and-mortar institution with 113 campuses in 40 states, and Puerto Rico that serves over 45,000 students who must be at least 23 years old and are currently employed. Classes are taught in rented office buildings near airports and business centers, and instructors tend to come from business rather than acadame. The Phoenix online program holds class size from eight to 13 to encourage interaction with the teacher (Barlow 1998:1).

California's Virtual University is another potent competitor for students, and perhaps a better model for Egypt to pattern its burgeoning college population after.

If California were its own country, it would have the world's fifth best economy. Home to 33 million residents, California is more of the United States' most populated states with about 12 percent of the nation's population.

Though all the "wrinkles" are still being ironed out, CVU appears to be a successful experiment. The basic difference between the WGU and the CVU is that the California plan is more traditional. CVU allows students enrolled at one of the 132 universities in the California State College system that offer courses on campus as well as over the Internet provided by professors throughout the California system. Currently 4,000 college courses are offered online or on television.

The advantage over WGU is that CVU course credit applies directly toward graduation with a four-year degree from a California college or university. It does not add another layer of governance above the college system, as WGU apparently does (State of California 2001).

More adult students are choosing Internet-based learning over the traditional classroom setting. Schools that ignore the potential of Internet-based learning risk falling behind a growing trend, said Frederic Prager, a managing director of Prager, McCarthy and Sealy, which focuses on underwriting bonds for colleges and universities (Kruger 1998:30). Universities and colleges will have to address the concept that distance learning has the potential to become global learning. A central data bank does not care that a learner tapped into it from across the street, from the next state or from another continent. Distance learning is not limited by geography (spatial) but by time zones (temporal) (Caincross 1997).[8]

The Internet and computerization has created a whole new way of delivering information. They blur the distinctions made by media scholars in the 1980's and before that governments favor big, expensive, nearly one-of-a-kind media not readily replicated in the private sector (such as television, micro-wave relays, satellites, etc.). Today governments of all sizes and shapes view big and small media with equal favor.

The new technologies allow governments and educational facilities to "load shed" much of the cost to the consumer who must invest in a telephone line and a computer and possibly a digital camera, all of which can be used for non-dedicated purposes.

In 1995, the International Center for Distance Learning (ICDL) conducted an analysis of the largest Open Universities (OU) around the world.

OU's are distance-learning-based universities that provide credit and certificate programming and are usually operated by television broadcasters or higher education institutions. The IDCL identified 10 such mega-universities, each with student enrollments of over 100,000. They were located in the People's Republic of China, France, India, Indonesia, South Korea, South Africa, Spain, Thailand, Turkey and the United Kingdom. These universities reach over three million learners.

The model for distance learning on a large scale was developed at the 30-year-old United Kingdom's OU, which has about 200,000 undergraduates in the United Kingdom, and another 16,000 in other countries. Over 10,000 of these students, some of them Egyptians, take postgraduate courses. Computers and telecommunications are used by UKOU on a massive scale, dwarfing anything planned by the WGU.

The UKOU offers more than 400 programs, courses and study packs, and recently launched an international Master of Arts degree program in Open and Distance Education. Since 1998, WGU has cooperated with the UKOU to become the world's largest distance education provider.

India, which has been in the distance learning business since the mid-1970's when it borrowed the ATS-6 Satellite from the Federation of Rocky Mountain States to beam family planning, health and agriculture information to 2,000 villages.[9] Today the Indira Gandhi National Open University (IGNOU) has 200 full-time faculty and 12,800 part-time faculty teaching 375 courses from 58 programs to more than 90,000 students (Krebs 1998).

Conclusion

This paper was an attempt to shoot history on the wing. WGU last year graduated its first student with a two-year accounting degree. Though it has generated considerable interest in higher education circles in the United States, WGU probably is not the right model for Egypt because it pits the self interest of educators against the desires of government to provide quality higher education at an affordable price.

Whichever model Egypt develops—or whether it develops one uniquely Egyptian—the country is ready technologically for distance learning.

Recognized in the Arab world as a leader in educational commitment and excellence, undergraduate education institutes and colleges have nearly doubled in 15 years to over 200 in 1996. More are planned. Four new private universities were chartered since 1996; and two new international universities (German and French) will be starting soon in direct competition with AUC.

Egypt is committed to education growth. The Mubarak-Kohl Initiative, for example, established new vocational-technical institutes throughout Egypt, attracting boys and girls to career programs. These students could benefit greatly from satellite-beamed educational programming.

Perhaps more importantly, Egypt has the technology to export education

programming to other Arab states (Amin 1997/1998).

The country has invested $310 million in two communications statellites that can carry education programs as well as Internet, Mobiles and commercial and governmental radio and television channels (Amin and Gher 1999).

In addition to Nilesat 101 and 102, the Free Zone Media City that occupies three million square meters in 6th of October City, is perfectly placed to produce software—the programs carried on television. A part of the facility could be used to produce education programs specifically designed to produce educational outcomes and competencies that could be measured.

In short, Egypt's future as a regional education service provider is bright.

Notes

[1] Named for an Illinois judge who ruled in a jurisdictional dispute that states were not autonomous entities but that, like the U.S. Constitution's "supremacy clause," cities, counties and other legal entities were suborned to states.

[2] See Harold Lasswell, *Politics: Who Gets What, When and How?* 2nd ed. New York: McGraw-Hill, 1936. Lasswell's argument is that distribution of tax resources is what drives the political process.

[3] Conceptually, telecommunications has not technically shrunken the world, but has drawn the world closer together almost to that ancient, single continent before it "drifted."

[4] States spent $46,507,624,000 on higher education in 1998, up 8.5 percent from the previous year, more than double the rate of inflation. Source: *Chronicle of Education Almanac 97-98.*

[5] The American Association of University Professors have published several policy statements concerning its position that faculty should have a greater say in the administration of universities if not the overall state policy toward education.

[6] Also for more about the cultural wars on campus that might have affected state policies see Richard Hofstadter. 1963. *Anti-Intellectualism in American Life.* New York: Vintage Press; Allan Bloom. 1987. L *The Closing of the American Mind.* New York: Simon & Schuster; Dinesh D'Souza. 1991. *Illiberal Education: The Politics of Race and Sex on Campus.* New York: The Free Press; and Russell Jacoby. 1994. *Dogmatic Wisdom: How the Culture Wars Divert Education and Distract America.* New York: Anchor Books.

[7] Specifically, the reinventing government movement started with David Obsbone and Ted Gaebler's, *Reinventing Government.* Reading, Mass: Addison-Wesley, 1992; and was adopted by the Gore Commission to streamline government. The "entrepreneur movement" in government based on principles learned in private enterprise was a key factor in the reduction of public employees during the 1990's.

[8] For a discussion of technology reducing distance between points, see *The Death of Distance* by Frances Cairncross (London: Orion Business Books, 1997).

The author sees a world where time zones will matter more than miles; where culture, language and interests bind communities more closely than geography; and where new ideas and information will travel faster than ever before to the remotest corners of the globe. The death of distance changes the cost structure of information delivery, which she considers the most important single force sharing society into the next century.

[9] See Ralph Berenger, "Education from the Stars: Recent Pedagogical Uses of the ATS-6 Satellite in the United States." Unpublished Master of Arts thesis. Minneapolis: University of Minnesota, 1975. Author studied the capabilities of the satellite, which was used for distance learning in selected sites in the United States.

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Electronic Multimedia Texts & Pedagogical Expectations

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Our students' increasing involvement, today, in interactive hypertext, CD Roms, and video / sound clips on the Internet has not only created a crucial need to redefine the literacy pedagogy in our institutions, but has developed yet a greater demand to reconsider Aristotelian rhetoric in the sphere of communication strategies made available both by the electronic environment and the visual culture we live in. An attempt is therefore made here to investigate the possibilities of integrating multimedia technology in meaningfully complex texts, as opposed to purely informative ones, and to seriously probe the consequent pedagogical expectations of our near future in the field of education.

The impact computers have had on educational theory and practice resulted in certain complications that gave rise to questions about literacy and the nature of a text in ways we continuously struggle to discern, The variety of software use, the fluid nature of the electronic text, the "final-like" quality of the written composition has certainly given rise to questions on the nature of a text and it's authorship. Furthermore, with the advent of the Web and its global network of pages and hyper links other greater complexities arose in ways, this time, we can hardly begin to fathom. Both reading and writing became defined by expectations of interaction by different readers with different needs, and by collaborative texts written to appeal to millions of culturally diverse browsers on the Internet. Consequently students and teachers find themselves grappling with digitized writing and reading within connected environments where texts appear and disappear between the flicker and glimmer of a computer screen as opposed to its manifestation in the more familiar sedentary hardcopy printout. This web literacy has definitely had its impact on pedagogy by negotiating a multiplicity of discourses and rhetorical skills to account for culturally diverse and, of course, increasingly globalized societies. Indeed, Marshall Mc Luhan's and Joseph J. Shapiro's claim to writing being always shaped by its tools and audiences resounds even more audibly than ever in our 21st century.

The effect of the computer medium on genuine changes in reading and writing has inevitably resulted in a greater potential for change in pedagogical literacy theories. These theories found a need to include an understanding of the representational forms that have become increasingly significant in our overall communication environment. Indeed, the graphics medium has become inextricably bound to the verbal (in what Krieger (1992) would call an "ekphratic" relationship), and effective rhetoric on the Web has definitely been perceived as a strategy of verbal / visual / aural persuasion towards its target; a way of *showing while it tells*. The relationship of literature with the fine arts has always been queried long before the advent of web technology as far back as the hand written illuminated manuscripts of twelfth century scribes. A whole range of literary theorists, art historians and

psychologist today agree on the impact the visual culture we live in has had on our way of thinking, such as in the works of Gombrich (1982), Mitchell (1994), and Arnheim (1969), to mention a few. Indeed, already in the literary field poets like the nineteenth century French Rimbaud had not only yearned to visualize more concretely the *colors* of vowels: "A, black, E white, I red, O blue [and] U green", but also expressed a desire to control "the movement of every consonant" (as cited in Peschel, p.77). Literary critic, Joseph Frank (1945), had also seen parallels between literary texts and spatial forms and convincingly demonstrated the intersecting ideas and affinities of both creative forms. These views have definitely found a more concrete expression in Web technology that in turn was bound to affect theories of rhetoric in general.

It is obvious that "theories of rhetoric", Mitchell complacently remarks, have always appealed to the "model of word / image conjunction to define the relationship between argument and evidence, precept and example, *verbum* (word) and *res* (thing)" (as cited in Nelson & Shiff, p. 49). Jay Bolter (1991) had already written extensively on how the Web is both a verbal and a graphic medium where images, video and animation appear in close association with the verbal texts. He also warns how the "renegotiation of the word and image that is taking place in our tradition and new media is leading to a crisis in rhetoric" (as cited in Nunberg, p. 264). In the hypertext environment John Tolva (1996) similarly remarks how the "links" and "designated paths" along which a reader travels are structured by a network of "allusions, parallelisms and juxtapositions that contribute to the sense of textual space" (Tolva online), in other words, that most definitely contribute to a reader's sense of spatial presence much in the vein of Joseph Frank's theories. Consequently, a demand for new skills in graphics design as well as hypertextual writing seemed to be necessary for coping with the new medium. Yet a more complex set of skills waiting to be mastered still lies ahead as animation, video and digitized sounds become more widely and easily available.

Indeed, multimedia technology has had an impact on writing skills in ways that have probed deep into our learning expectations and teaching methodologies as concepts of literature and the arts intercept. Consequently the role of the writer goes far beyond a writer's artistic capacity to handle words into ever more challenging ways of expression. New ways of expressions in writing today are made available that are visibly demonstrated when surfing the Internet. We discover the creation of a new electronic literature organization where fictions, like Marjorie. D. Coverley's *Life in the Chocolate Mountains*, (1999), are skillfully manipulated to integrate music, text and animation within an orchestrated creative masterpiece that can only exist online and in CD format. (www.hypertext.com/sh/no7/choc/achoc.htm). As for non-fiction instructions "for writing on the web", hypertext is not only taught within the confines of courses in institutions such as in George Landow's classes at Brown's, but are also taught online like the *Good Documents* (1998) web site, www.gooddocuments.com/homepage/homepage.htm) where specific details are given on the understanding of "information architecture" for the purpose of writing online. Academic M. A. thesis are also making an appearance in hypertext that can hardly be transferable in hardcopy

format such as Michael Shumate's (1996) dissertation accepted at Duke University. (www.duke.edu/~mshumate/fiction/htt/mals.html).

With all these changes taking place in the field of rhetoric and communication a parallel conceptual change was bound to take place in literacy pedagogy. Some of these changes have already been clearly manifested: in the pedagogue turned consultant, coach or editor, in the dream of a universal library come true where every word is knit together in a mosaic of knowledge, in the serious consideration of relational and spatial thinking where meaning does not necessarily depend on temporal relationship, in the restructuring of workstations scattered around the classroom and in the all too apparent breaking up of the artificial division of knowledge into subjects. Hardly any university student term paper in the U.S. is accepted without the production and design of a parallel web page, and few textbooks go without an accompanying CD or a supplementary interactive web site. There is consequently a great need for us to revise our theories of literacy pedagogy at AUC within the framework of the present information age and it's technological expression.

The purpose of this presentation at the conference was not to draw attention to the impact of electronic technology on education for this is pretty obvious; everyone today measures institutions by the number of computer labs and their connectivity to the Internet. The purpose of the presentation was rather to measure how profound that impact is on our pedagogy other than the technology's functional efficiency as a merely task oriented tool. Little did educational leaders know that by placing computers in their schools they were actually preparing the way for a revolutionary expansion of the notion of literacy to include visual rhetoric, the study of information architecture, the learning of various technical skills, and a new understanding of cognitive theories. The experimental creation of a multimedia cybertext was therefore demonstrated at the conference for its potential to express meaningful ideas as a possible multiple screen interactive argument that can grow into a collaborative effort as part of a student project on the web, where students can respond to it, and contribute to it in meaningful ways using constructive links to the Internet.

This demonstration finally revealed that writing projects with student-generated words and graphics have definitely become central to communicating ideas. The ease with which the Internet allows one to exchange and manipulate text and images has undoubtedly offered our students new opportunities of engagement with the composing process. However, our institution is faced with several options present today: to be satisfied with owning computer equipment and software, to try to redefine information literacy more broadly to constitute both a liberal as well as a technical art, or to just turn its back to all that with the excuse that we cannot start anything because . . . ad infinitum.

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Expanding the Role of the English Language Teacher in the Digital Age

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Abstract

The developments currently taking place in information and communications technology threaten to widen the digital divide between developed and developing countries. The threat is intensified by the fact that keeping abreast with these developments does not only require financial resources but essentially good mastery over the English language. Online educational materials for English as a foreign language (EFL) learners represent a promising source for improving the language skills of nonnative speakers. The promise of these materials is amplified by the introduction of new pedagogies to help make better use of these materials. Online materials developers are increasingly informing their designs with second language acquisition research findings. The availability of good quality Internet resources for EFL make it possible for learners to improve their language skills, both receptive and productive, outside of the classroom. However, with the scarcity of economic resources, wide use of these resources by schools is still not viable. Most learners in developing countries remain unaware of the existence of online EFL materials and what opportunities these materials can open up for them. The exigency of the situation requires thinking of different ways out of this problem. This paper calls for an expanded role of the EFL teacher, a role in which the teacher assumes a socio-educational role by guiding the students to the EFL sites they can access on their home computers to develop their English language skills and to ways the Internet can be used to help them develop intellectually.

The technological developments currently taking place in English as a foreign language (EFL) education make it necessary to reexamine the practices in the field. Computer-Assisted Language Learning (CALL) has introduced multimedia and hypermedia into EFL teaching. By integrating traditional classroom learning and CALL lab activities, new teaching and learning realities have started to emerge. In the CALL lab, the learner is required to become independent by being able to monitor performance, identify areas of weakness that need to be worked on, and work on those areas to overcome any learning problems. This, by definition, required a change in the role of the teacher, whose role has become that of the guide and collaborator who directs the learner to those sources or software programs that can provide activities in problem areas and can best help in overcoming learning problems. It remains a fact, however, that using CALL programs is limited to a great extent to use in labs belonging to educational institutions, which means that the teacher plays a more or less direct role in those environments.

The developments in Web-based learning and distance education on the Internet, in contrast, represent a more radical shift in how pedagogy is perceived and consequently provides a new perspective on the role of the teacher. With

regard to EFL learning, the resources available online are accessible to anyone who has access to the Internet. It follows that the emerging educational environment does not require the physical presence of the learner at an educational institution or the physical presence of the teacher where learning is taking place. The learner can explore a given Web site, surf through the material available, evaluate its relevance and decide on what to engage in in terms of skill development and activity type. However, attaining this level of autonomy is expected to take some coaching and guidance from the teacher. That is, the role of the teacher has not disappeared entirely by the advent of educational technology. Rather, the teacher is now assuming a different kind of presence and playing a different type of role.

Discussion of these developments seems to be so far-fetched from reality when the setting is that of a third world country. Fiscal problems make attainment of more basic types of educational technology a big feat. Even in schools where computers have been introduced in the syllabi, they are not used in an efficient, well-planned way (Warschauer, 2000). Lack of financial resources in developing countries coupled with poor planning for computer integration into education threaten to widen the digital divide between developed countries where technological advances are being used to enhance education and between developing countries. The situation is aggravated by lack of awareness of developments in educational technology and the fast developments taking place in that area, which means that the digital gap is bound to steadily grow larger. The end result is that it will become very difficult, if not impossible, for Third World countries to catch up with the developed world.

This paper discusses the developments currently taking place in educational technology, particularly in Web-based learning and proposes that if there is any hope for developing countries to get on track, one source of hope would be through an expanded role for the EFL teacher. The main premise the present paper is built upon, thus, is that EFL teachers can play a vital role both educationally and culturally. Graduate programs that offer courses in computer-aided teaching can play a substantial role in preparing future and practicing teachers to assume the role of the link between educational technology and their learners and colleagues. The central idea the present paper revolves around is that an increasing number of teachers and learners have access to the computer in home environments or at Internet cafes. The educational technology-trained teacher can play the role of the guide to sites which learners can access to improve their skills and teachers can access to improve their teaching. This implies that the role of the EFL teacher as an educator is bound to expand beyond the traditional role to have social and cultural dimensions.

The paper is structured as follows: It first presents some of the developments that have taken place in Web-based education and distance learning. Then, it discusses the pedagogical approaches offered in reaction to developments in educational technology and reviews some of the new suggestions for reinventing pedagogy to optimally use online resources. This is followed by discussion of online material design in light of second language acquisition research findings. To set the scene for the main purpose of the present paper, the digital divide as a result of implementation or lack thereof across countries is discussed. Finally, a ratio-

nale and suggestions for expanding the role of the EFL teacher are presented.

Web-Based Education and Distance Learning

The spread of the use of computers has meant that it could be put to a wide variety of uses, one of which is education. In EFL/ESL, CALL appeared as the obvious way computers can be used to support the process of teaching and learning foreign languages. More EFL software is being published for use whether in schools or by individuals on their home computers. The quality of much of the software has been steadily improving, both technically (ease of navigation, use of color, graphics, multimedia, among other features) and pedagogically (better planned and pedagogically-grounded content based on research findings). The more drastic development, however, has accompanied the emergence of the Internet, which, when used for educational purposes, opens to the learner the whole world to explore and learn. In a sense, then, one can say that while CALL software can be seen as *local*, Web-based learning is *global*, as the learner can follow links to sites found virtually anywhere in the world. Web-based learning is also global in another sense; all it requires is access to the Internet and the learner can use any site at will.

Web-based learning has led to the evolution of two types of online learning. The first relates to content learning. Content, academically-oriented, courses are being developed by companies and corporations (Feenberg, 1999a). These courses are attended online by students from different parts of the world and the computer monitor mediates between the learner and the professor. Distance Education is the result of the "tremendous surge in online courses" (Quality on the Line, 2000) and is based on the concept of collaborative learning, where discussion among the learners is given special attention and therefore assignments are based on assigning tasks to groups of students (Feenberg, 1999a). Internet-based distance learning has the advantage of offering learners the opportunity to learn at the their convenience wherever they are and at the time of their own choosing (Quality on the Line, 2000). This feature of providing "asynchronous interactive learning activities has become the significant characteristic of this technology, setting it apart from most of the other technologies" (Quality on the Line, 2000, p. 6).

Although distance education is still in its inception, it has to be taken seriously by educators for the important reason that fast developments in online technology will sooner or later dominate the educational scene. Feenberg (1999a) discusses some of the positive and negative aspects of distance learning in subject areas. One of the negative sides is that the process of course development has been taken over by administrators and telecommunications companies rather than by educators, for the obvious reason of profit making (Feenberg, 1999a; see also Feenberg, 1999b). The reaction of specialized faculty has been hostile, as they are being marginalized. The main positive side of online classrooms comes from networking, which leads to stimulating discussion. Feenberg, nonetheless, is doubtful that online education can be as effective as the face-to-face interaction typical of traditional classrooms. There is terrible need for new ideas to make up for the lack of such interaction; one of the innovations of distance learning in this regard

is the shift from text to video-based communication (Feenberg, 1999a). Another criticism of online materials relates to Web-based materials design, which is often still arbitrary, depending on the skills and interests of the developers (Peterson, 1999). For these reasons, benchmarks to ensure quality of distance education, encompassing course development, design and delivery, need to be developed (Quality on the Line, 2000).

The second type of online learning, other than CALL software, is that where EFL materials are made available at different Internet sites. These sites are enormous in number, with varying degrees of quality and offer EFL learners practice in all linguistic skills. The significant feature of these sites is that they are accessible from any computer with an Internet connection, i.e. they do not require the supervision or guidance of the teacher, as mentioned above. This second type will be the focus of the present paper. Knowledge of the English language by nonnative speakers has become a necessary requirement for creating opportunities for work and intellectual contribution (Pakir, 1999). The EFL multimedia materials available online represent an excellent resource for working on language skills that need development. More significantly, resources available online offer invaluable opportunities for EFL learners to develop intellectually (Watts & Yetter-Vassot, 1994). Warschauer (2000), for example, points out that in a world where globalization has become a reality, competition for employment will be open to anyone who is qualified. Qualification goes much further than obtaining a degree. In addition, there are certain skills that will be required by the global job market. Knowledge of how to use the language appropriately in interaction, the pragmatics of language use, and holding negotiations and business deals will also become essential skills (Warschauer, 2000). Thus, in order for individuals from developing countries to stand the chance of competing for jobs requiring higher-order skills, what Warschauer (2000) following Reich (1991) calls *symbolic analysts*, they have to master the additional skills of analysis, synthesis and evaluation (Quality on the Line, 2000).

Pedagogy, Autonomy, and Educational Technology

Technology has changed and is changing many aspects of education. I will focus here on those aspects relating to FL education. One of the changes educational technology has brought is in writing (Feenberg, 1999a; Sullivan, 1998). Teaching the writing skill using word-processing software and networked systems has had some positive results, especially in courses that teach process writing. Composing on the computer has made the processes of planning, organizing, shuffling portions of text, revising and editing possible at the click of a button. In effect, it made a process long regarded by learners as cumbersome and time consuming more manageable and even enjoyable. In addition, networked discussion has been shown to lead to learning discourse–management tactics, which are closely linked to developed writing ability (Swaffar, 1998b). The essential outcome is that better texts can be produced by EFL learners.

An important theme in EFL pedagogy has been promoting autonomy in foreign language learners (Holec, 1981). The idea of promoting learner independence

has been even more emphasized in the EFL pedagogy that integrates CALL and online technology into the EFL curriculum. Autonomous language learning, however, has been defined differently by different people (Murray & Kouritzin, 1997). Yet, three common components of the term were identified by Murray & Kouritzin (1997, 191) through an examination of studies that dealt with the topic: structure, control and responsibility. The components of autonomy should allow for the following: a) "active use and exploration of the target language"; b) interaction in the TL to allow for direct contact with it; c) making available a wide variety of materials for the learner to choose from "so that the choice becomes a key element of learner control"; and d) "learner management of choices and assessment" which empowers learners "to determine their own pace and make decisions based on personal needs, learning style, and interest" (Murray & Kouritzin, 1997, 191).

There are dangers, however, to leaving learners on their own without first preparing them for the task. Barnett (1993) addresses the issue of learner autonomy and warns that leaving the learners alone without preparing them for critical decision making can be harmful. Equally harmful, Barnett (1993) warns, would be transferring lockstep classroom methods to computer-mediated learning environments. Barnett also warns that educational technology can become dangerous if it imitates closely the traditional controlling role of the teacher. This way it becomes a "substitute tutor" (Barnett, 1993, 296). Learner autonomy, he adds, should be promoted through developing the learners' "self-direction, learning skills and responsibility". Autonomy entails transferring the responsibility of learning and decision-making and self-direction to the learner. It follows that programs that replicate teacher-controlled learning environments cannot lead to autonomy, independence or self-direction.

In a discussion of instructional design, Hoffman (1995/1996), emphasizes two components of learner autonomy, pacing and learner control. To help learners pace themselves conveniently, she suggests the material be portioned in smaller segments with ascending difficulty. The learner can use an index of the exercises to decide which ones to do. This kind of control would, in addition to allowing the learners to work at their own pace, lead learners to avoid doing exercises focusing on already mastered skills. Another aspect of control that learners can exercise in online learning is determining whether they have learned the point at hand or whether they still need more practice. A test covering the material introduced in a lesson can help them in this regard.

In addition to learner autonomy and where pedagogy is concerned, mere use of technology can be meaningless. Armstrong & Yetter-Vassot (1994) refer to Bailey (1986) as indicating the impotence of technology when applied without creativity or imagination. When the issue under consideration is integrating technology into the EFL curriculum, it is crucial to produce activities utilizing the technology to enhance the different pedagogical goals of the curriculum. Technology, like books, Armstrong & Yetter-Vassot (1994, 476) assert, is an "inert tool". It is how the tool is used that can give it significance. It is the interactive and multimedia features of CALL software that give it potential as a teaching and learning tool. Educational technology entails empowering the learner and "encouraging students to leave

behind the notion that learning means rote memorization"; instead, it should help them to realize the importance of exploration and "that there are multiple pathways to knowledge" (Armstrong & Yetter-Vassot, 1994, 483).

The advent of CALL software and the use of computers in EFL teaching represent an important step forward in the development, conception and use of educational technology. The unrealistic expectations of what educational technology could do when it was first introduced in the 1960s, when cassettes, recorders, OHPs and VCRs started to be used in EFL education, led to disappointment and frustration on the part of both teachers and learners. CALL software offered the leaner multimedia and interactive environments. The promise in multimedia packages, by contrast to earlier technologies, lies more in learner-based orientation than in a technology-driven one (Watts, 1997). Interactive multimedia programs are "applications which seek to create exploratory learning environments in which digital sound, image, text and video components are fully integrated" Watts (1997, 2). Mere use of technology in the EFL classroom cannot realistically be considered to transform learning. The interactive aspect of the computer software, and by extension, online materials make it possible for the software to offer feedback on performance, thereby performing a function that was solely done by the teacher. Furthermore, some feedback is instructive in that it explains to the learner why a choice is incorrect.

Interactivity has meant that CALL software designers must by aware of issues relating to second language acquisition (SLA) research (Chapelle, 1998) and ESL pedagogy. SLA research examines, among other things, the role of interaction in promoting acquisition and the role of negative evidence in the process of acquisition. One method of providing negative evidence is negative or corrective feedback, which can play a crucial role in consciousness raising, a central aspect of SLA as it leads to rule modification in the learners' internalized grammar. The interactivity of CALL software programs, in addition, has made it necessary for the role of the teacher to change.

With the change in the source of input and interactivity and more importantly the change in the interface with the learner from teacher-learner to technology-enabled interface, two accompanying changes become necessary. The first change is in the pedagogy and the second in the role of the teacher. First, I focus on a discussion of some suggestions for reinventing pedagogy to cope with the shift in the interface with the learner. This will be followed by a section on how second language acquisition research findings can be used to inform online program design.

Reinventing Pedagogy

The central difference between traditional classroom teaching and online teaching lies in the absence of face-to-face contact and interaction between teacher and learner. This type of contact is what good teachers use intensively in making decisions about whether to repeat a point or move on to a new one, whether learners need more practice to consolidate a teaching point or not, whether or not all the students seem to have satisfactorily understood the point at hand, etc. This is

what the U. of I. Report (1999) cites Hansen (1998 & 1999) as calling teacher "attentiveness", the attentiveness that does not only ensure that students have assimilated the new knowledge but also that raises and maintains the learners' motivation. Although online instruction lacks face-to-face interaction, it does seem to have its own advantages. Rigorous discussion that can raise students' motivation can take place online through email and chat rooms (Kamhi-Stein, 2000). The written venue of communicating online allows nonnative speakers ample time to understand their position from an issue and to plan their responses, something that can improve the quality of the discussion (Chun, 1998; Kamhi-Stein, 2000, among others). Online discussion, in addition, allows shy students to participate fully in the discussion. This feature of online communication is significant, as when the discussion is topic-driven, linguistic skills develop faster (Swaffar, 1998a).

Some research has explored the pedagogical effectiveness of online education. It seems, however, that there is still lack of agreement in this regard. Some aspects of the problem of evaluating the effectiveness of online education relate to people's expectations of what online education can do. The U. of I. Report (1999) cites White (1999) in a similar discussion in which the basic idea is that the medium itself could not be expected to improve learning or develop skills in the students (see also Warschauer, in press). Rather, the problem lies in identifying the new medium's advantages and then finding out how best to use it to achieve the best educational results.

Online education will require a thorough examination of existing teaching methods. Education, we know, is not simply transfer of information. Learning styles and learner differences must be taken into serious consideration in distance learning (Kearsley, 1993; Sonwalker, 2001). Multimedia is helpful in providing the variety required to accommodate the different learning styles (Peterson, 1999). In designing multimedia programs, Watts (1997) favors learner-based approaches developed by educators over technology-based ones developed by companies. Watts describes learner-based software design as one where the starting point is the learning needs. In doing so, we can understand "*why* the learners wish to learn a language, *what purposes* this learning will serve, *how* they best learn a language, *which* learning strategies they favor" (Watts, 1997, 3). Another factor that needs to be considered in the pedagogy of online education is learning styles. Sonwalker (2001) discusses five learning styles that need to be considered in the pedagogical planning of distance education, i.e. asynchronous instruction. The five learning styles are: apprenticeship, in which information is presented in a step-by-step procedural manner; incidental, where an event leads to a learning experience; inductive, where examples are used to introduce a concept; deductive, using different types of data to draw conclusions about trends and patterns; and discovery, which lets learners learn by doing.

Most approaches to EFL pedagogy are based on an environment where the teacher directs the teaching and learning in different ways, depending on the approach followed. Educational technology has provided a new environment in which the teacher may not be physically present. As an immediate consequence, course and materials designers are faced with a new situation for which long-

used approaches to pedagogy may not be effective. One way to face the new learning setting would be to base online pedagogy on theories of learning (Sonwalker, 2001). Research in cognition has shown that different learners learn differently and that the different modes of learning result from differences in modes of perception (auditory, visual, kinesthetic, etc.). The fact that there are individual differences among learners and that for pedagogy to be effective these differences must be accommodated in the educational setting has been given adequate consideration in SLA research and ESL teaching methodology. There is a concomitant need for online language teaching to use the technological resources to the full. However, one of the problems of online courses, Sonwalker (2001) points out, is that they attempt to recreate the traditional classroom environment. In doing so, course designers are restricting the capabilities of the new interface. An essential proposal that Sonwalker makes is that online pedagogy must at once allow for both individual differences and accessibility to large numbers of audiences who have available to them collaboration and discussion modes. Implementation of hypermedia comes in handy in that regard. The pedagogical advantage hypermedia offers to distance learning lies in its ability to incorporate sound, graphics and video clips (Sonwalker, 2001; Feenberg, 1999b). By integrating hypermedia in an online lesson, different learning styles can be catered to and better learning for a wider audience can be guaranteed.

It remains a fact, nonetheless, that software designers encounter many problems during the process of program development (Beckett et al, 1999). One of the problems relates to adjusting the content culturally to the target audience. When marketing a software program, sensitivity to cultural issues becomes tantamount—something that content designers must be very aware of in the process of content development (Beckett et al, 1999). On the commercial level, in addition, there are other factors that constrain the design process, including assumptions and beliefs, economic, and political factors (Beckett et al, 1999).

All the above, suggests that pedagogy must change in order for the new learning conditions to be productive. In evaluating, CALL or online EFL materials, in addition, an essential component to examine is the approach to and effectiveness of the pedagogy used in light of the findings of second language acquisition research, which the following section aims to examine.

Second Language Acquisition and Educational Technology

Technology allows for increasing contact time with the target language (TL). It provides opportunities for exposing learners to more input as a result of the extended exposure out of class. This enhances acquisition by providing learners with more opportunities to use English. Armstrong and Yetter-Vassot (1994) discuss the paradigm shift in teaching and learning resulting from educational technology. They are both enthusiastic and skeptical about its potential. However, it is a given now that technology is here to stay and that sooner or later it will be indispensable in education.

Online material design and development, as has been discussed above, must take into account a number of pedagogical and cognitive factors that can lead to

optimizing the quality of learning. These considerations, however, apply to all types of learning. When the focus is on development of material for foreign or second language learners, relevant theories of second language acquisition must be the basis on which material design is built (Chapelle, 1998; Masters-Wicks et al, 1996; Peterson, 1999). Material designers and developers, must consider aspects representing agreed upon assisting conditions for SLA such as the importance of interaction and communication as well as input saliency (Chapelle, 1998.)

Interaction as a social behavior is necessary for acquisition to take place. Social interactionist theory emphasizes the importance of interaction in helping the acquisition process. Interaction is crucial for helping making some features of second language grammar salient, hence noticed by the learners (Bardovi-Harlig, 1987; Ellis, 1994). Cognitive interactionist theory also regards interaction as an essential factor in SLA, especially in helping the learners mentally reorganize knowledge of second language grammar (Ellis, 1994). Cognitive approaches to SLA focus on information processing and the role of short- and long-term memory in acquisition. The interactive opportunities MOOs, online bulletin boards and email exchanges offer are an excellent venue for practice through authentic tasks whose purpose is the creation of meaning (Peterson, 1999).

Gass (1988) developed a model of SLA which attempts to represent the cognitive stages that take place from the first exposure to L2 input to the point at which the second language learner produces output. (See also Gass & Selinker, 1994.) Developing online materials based on findings of theories of SLA can be valuable in improving the learning outcomes. Cognitive theories of SLA have suggested the importance of consciousness-raising and noticing of certain grammatical features in the input (for example, Ellis, 1991; Fotos, 1993). Some experimental research has shown that manipulating input in such a way that makes certain problematic features become salient has positive results on acquisition (Bardovi-Harlig, 1987; Doughty, 1991). Such methods of input enhancement have proved important in SLA (Sharwood Smith, 1993). Some researchers (e.g. Barnett, 1993), however, have cautioned against exposing the unguided learners to huge amounts of information and resources. They can be overwhelmed, as Barnett puts it, "even if the input is comprehensible" p. 296. Exposure to large amounts of information can confuse the learners, as they are not trained on how to explore it and sort it out efficiently. Resources do not necessarily lead to resourcefulness, to paraphrase Barnett.

Research in second language acquisition (SLA), in addition, has addressed issues relating to program design and its role in enhancing SLA. Pica (1997), in a discussion of the relationship between SLA research and classroom teaching, significantly points out that research in the area of instructed SLA interfaces with classroom application, as it aims to develop activities to facilitate SL learning. One approach to SLA that lends itself to the link between SLA and classroom teaching is the interactionist approach, mentioned above. Gass & Selinker (1994) present a model of SLA in which a number of approaches are integrated. This model combines the cognitive approach, which attempts to explore how the learner's brain develops from total lack of knowledge of L2 to gradual syntactic

analysis of input, until finally an L2 feature or rule is integrated into the learner's developing L2 linguistic system and eventually this feature or rule appears in the learner's output. Interacting in L2 gradually leads to acquisition as it allows the learner to produce output, and output elicits feedback from the hearer, thereby activating cognitive processes such as hypothesis modification, rejection or confirmation. The last leads to rule integration. The processes affecting hypotheses in different ways can be seen as a direct byproduct of negotiation of meaning, an essential product of interaction. It follows that interaction in the target language is indispensable in the process of SLA. For online material to have any effectiveness in the learners' attempt to acquire a second language, hence, interaction must represent an integral component of material design. This is emphasized by Hoffman (1995/1996), who points out that interactivity and learner control are two of the attributes that make CALL software attractive for educational purposes.

Acknowledging the role of interaction in promoting acquisition together with activities focusing on formal features, some researchers, e.g. Hoffman (1995/1996), have suggested division of labor between the computer and the teacher, where the computer becomes responsible for development of language-related formal features and the teacher for interaction. Others, for example Chapelle (1998) and Masters-Wicks et al (1996), have proposed that the computer can perform the role of the interactant with the learner. Designing tasks that offer opportunities for interaction and push the learners to produce output in the second language can be of extreme value in boosting acquisition. Chapelle (1998) proposes that CALL software designers should take into consideration research findings in the area of the importance of input and input manipulation in aiding acquisition as well as providing the learners with opportunities for interaction that push learners to produce the target language. When CALL tasks are developed with these considerations in mind, the computer becomes *a participant* in L2 tasks by playing a central role in providing input and interaction (Chapelle, 1998: 26). Interaction in L2 requires that the learner produce comprehensible output (Swain, 1985). One idea for an activity that offers the learner an opportunity for interaction is the use of speech recognition software to evaluate a student's response in an interactive story where the computer asks the learner questions and the student responds in writing (Chapelle, 1998). Another and perhaps a more authentic way of producing output is engaging the learners in chat room and email discussions.

While the primary purpose of EFL instruction is to teach the students to communicate in English, it is a given that teaching learners to master and manipulate the structures of the language would not suffice to enable them to communicate (Hoffman, 1995/1996). They must be able to employ these structures to communicate. This means that to foster effective communication, classroom activities must be designed so that both the structural and functional aspects of the language are incorporated. More importantly, this should be done in the context of the social and cultural norms of the target language (Hoffman, 1995/1996). The central idea is that drills and other exercises focusing on linguistic and structural features can be done on the computer. Reading can be done using hypermedia programs that offer access to vocabulary and grammatical explanations. The com-

puter can provide feedback and offer tests with scores and explanations. This can free up more class time for more creative interactive activities. Activities that aim to promote the spoken communicative ability of the learner, hence, should be done in the classroom as they need the direction and insight of the teacher.

Another aspect of language input that material designers need to consider in planning their online materials, in addition to interaction, is the lack of salience of some linguistic features. Lack of salience means that those features will go unnoticed by the learners and become gaps in the learners' developing systems, leading to errors. This is supported by SLA research in instructed acquisition which has demonstrated that carefully planned EFL activities can help learners notice such features (Bardovi-Harlig, 1987; Doughty, 1991). In order to help learners notice some pertinent structural properties of relative clauses, Doughty (1991) developed CALL reading comprehension passages with communicative activities targeting these properties. She used visual props such as highlighting, boldfacing, and pop-up rule explanations for that purpose. The results were encouraging in terms of the amount of improvement in the subjects' performance. Online material designers can follow Doughty's line of developing activities that can help make problem features salient through using the many features hypertext makes available to them, such as visual effects such as color, underlining, boldfacing, as well as others, or through providing explicit rules of grammar.

Some research has explored aspects of online learning that can directly or even indirectly have some bearing on SLA. Kamhi-Stein (2000), for instance, examined how face-to-face discussion led by the teacher in typical classroom interaction differed from Web-based bulletin board discussions. Her findings are promising in that they indicate differences in the structure of interaction and the amount of student contribution, differences that go to the benefit of language learners. The structure of interaction in the classroom typically has three components, two of which are performed by the teacher (initiation and evaluation) and only one by the learner (response). Web-based discussions, in contrast, were found to have two turns, both performed by the students. This supports Kamhi-Stein's premise that computer-mediated communication (CMC) increases learner motivation and involvement and that it also raises student awareness of pragmatic aspects of language use, as interaction requires social sensitivity to audience needs.

The importance of interaction and communication in helping learners become members of a community is emphasized in Murray (2000). She considers CMC as a medium creating a *speech* community, where individuals use standard linguistic conventions. NNSs need, among other things, to acquire and use those conventions in order to become members of this community. CMC, Murray convincingly argues, is a literacy event. Literacy in computer-mediated communication is a special kind that has its own definition. Some aspects of CMC communication are similar to oral communication. However, the orality of CMC is dependent on the relationship between interlocutors rather than its being an intrinsic property of the medium itself. The medium, thus, is mainly text- rather sound-based, yet the linguistic features of communication combine aspects of both, depending on the relationship between communicators. The discourse of CMC,

Murray (2000: 407) contends, is socially constructed. To study this discourse, hence, *critical pedagogy* or *critical literacy* which examines "how the language and its use frame interaction" should be adopted (see also Warschauer, in progress). She focuses on three aspects in which English language educators can employ CMC. These are the dominating language of interaction, access to technology, and control of discourse. Murray (2000) points out that the English domination of communication in cyberspace is a reflection of the fact that historically the new technology was developed in the English-speaking world in addition to the expansion of the English language that has made it the lingua franca of the world. Interestingly, most users of the Internet must use the English language to communicate via its various venues. The significant result is that English norms and conventions of interaction dominate email and chat room interaction. What follows from this fact is that competence in English in order not to be "excluded from a potentially influential medium of communication" is a basic requirement (Murray, 2000, 408). More significantly, Murray, points out that unless participants in these channels of communication are competent in English, they "may experience the use of English as a tool of power" p. 408, i.e. lack of good command over the English language may lead to marginalizing nonnative speaking users of the Internet. These facts suggest that there is more incessant need for learning English as a foreign language. Knowledge of English has become a requirement for individuals to become members of the cyberspace community, especially when using CMC to communicate in an international forum.

In order to facilitate and speed up the acquisition of English, the language of the Internet, pedagogical approaches to content development and design of online materials must take into account research findings in SLA. Establishing guidelines for online material design has been attempted in some research, but the attempts are still sporadic and a lot more needs to be done in this direction.

Before turning to the main issue this paper purports to discuss, the expanded role of the EFL teacher in developing countries, it seems crucial to discuss the gap that is dividing the world into developed and developing countries. The following section deals with the digital divide, which represents a stumbling block preventing developing countries from having an active role in current technological developments, especially in the new world order and globalization.

The Digital Divide

The development of information technology and its infiltration of all aspects of life have led to a situation where access to and use of technology plays a central role in individuals' opportunities for attainment of not only information but even jobs. Access to technology has resulted in dividing communities within and across nations into those with or without such access (Warschauer, in progress). Internet access is determined by income and education; however, income correlates with computer ownership, while education correlates with types of use (Novak & Hoffman, 1998). A few researchers have expressed the concern that the Internet may lead to a digital divide between the technology haves and have-nots (Novak & Hoffman, 1998, among others). It should be made clear, though, that the Internet

itself is not the source or cause of the divide (Warschauer, in progress). Rather, Warschauer (in progress, 1) contends, the digital divide is the result of the "political, economic, constitutional, cultural, and linguistic contexts which shape the meaning of the Internet in people's lives". Although Novak & Hoffman's (1998) study was conducted to demonstrate how race, because of income and education differences, impacts computer ownership and access in the United States, similar patterns of the digital divide can be discerned in different parts of the world. Focusing on the Middle East and Africa, Statistics (1998), in Murray (2000), indicate that there were only 3.03 users per 1,000 per capita use of the Internet in these parts of the world. (It should be noted, however, that in the Middle East access to the Internet is growing very rapidly (Murray, 2000). One of the serious repercussions of this severe lack of or, at best, limited access to information technology in Third World countries is that the gap between the developed world and the developing one is bound to become larger. This gap refers to the digital divide, which Warschauer (in progress, 1) considers a consequence of "unequal ability to access, adapt, and create knowledge via use of information and communications technologies". In a sense, thus, the divide is not as much created by *access* as by the *types of use* the Internet is put to by users, as Novak & Hoffman (1998) indicated.

Two problems that represent hindering factors for Third World countries in attempting to catch up with the developed world are lack of knowledge of English and lack of the required technology (Murray, 2000). Perhaps one can consider the second to be a bigger hindrance since it is the result of the lack of economic resources in general. Availability of economic resources, it can be argued, can lead to better knowledge of English, as it can open up many channels that require use of English. Lack of economic resources is reflected in the lack of infrastructure, which made Africa the least computerized continent (Murray, 2000). Ineffective use of Internet resources by educational institutions in developing countries can be seen as a third, hindering factor to be added to lack of knowledge of English and lack of technology (Warschauer, 2000).

Access, thus, represents one level of the digital divide between developing and developed countries. Access to computers in Third World countries can serve two ends. The first is helping individuals develop English language skills, as access to the Internet and specifically to CMC provides opportunities for authentic interaction in English. Interaction offers learners the opportunity for *production* and production has a recognized value in developing the ability to create content (Warschauer, in progress). The value of interaction for acquisition is tremendous as has been discussed in the SLA section. The second is to qualify people for jobs that require computer literacy or the thinking skills that Internet literacy can help them develop (Ramanathan, 1999; Warschauer, 2000).

Use is another important factor reflecting the digital divide, perhaps more on the intellectual level where types of use are concerned. Effective use develops from literacy skills relating to Internet use such as analytic and critical skills (Warschauer, in progress). Use of information technology focuses on those types of activities an individual does on the computer, including using the Web. Some studies have investigated the effect of the socioeconomic divide on the types of

use computers and the Internet are put to. Murray (2000), for example, points out that variables such as gender, race and education were found to predict access and use in the United States. Similar predictors can be assumed to exist in other societies. For the economically less fortunate to be able to make effective use of information and communications technology (ICT), therefore, two aspects of the "human capital" need to be promoted, literacy and language (Warschauer, in progress). On the individual level, education and literacy are important in promoting the skills required for making effective use of Internet resources. On a more general level, Robison and Crenshaw (2000), in Warschauer (in progress, 5), point out the necessity of mass education in driving "the demand for computers and online skills".

The potential uses of the resources available online on the Web are enormous. Optimum use of these resources can be very enriching and edifying for users. One such intellectual aspect is development of analytical and critical skills required for surfing the Internet and deciding among sites where the information needed is available. The danger of lack of guidance on what can be accessed on the Internet is scary. For many young people in Egypt, for example, the Internet is regarded and used as a pastime. Music, tones for mobile phones, games and other fun-related activities represent the major aspects of Internet use. In an informal interview survey that I conducted among middle school students and ELI students at the American University in Cairo (AUC) in the Fall 2001 semester, it was found that games represented the most used online activity. The seriousness of limiting the role of an enormous resource for intellectual development to low-order cognitive practice is obvious. This is exactly what Schiller (1996), in Warschauer (in press, 1) warns against by indicating that "a growing flood of mind-numbing trivia and sensational material" can thwart the "ability to understand, much less overcome, increasing critical national problems". This is where, I believe, the expanded role of the EFL teacher comes in.

Expanding Teacher's Role

In the age of information technology, the English language plays an extremely dominant role. English dominates most Internet sites. Most email exchanges are in English. Add to this the fact that the vast majority of scientific research whether printed or online is published in English. The spread and infiltration of the English language as the language of science and technology, the language of the Internet and the lingua franca of the world is forecast to continue through, at least, the first half of the twenty first century (Graddol 1997, in Pakir, 1999). The demand for EFL/ESL teachers, hence, is bound to increase as "English has become a global commodity that seems to have no sell-by date attached to it" (Pakir, 1999, 104).

Online instruction means that the teaching and the learning are mediated by the computer (U. of I. Report, 1999). Computer-mediated instruction (CMI) is when instruction is mediated by networked computers and professor and students communicate either in real time (synchronously) or off-line and sequentially (asynchronously) (U. of I. Report, 1999). All types of computer-mediated

instruction can be referred to as distance learning. Usually, online practice is an extension to classroom time; from this came the term computer-assisted language learning (CALL). With the change of interface, the role of the teacher was bound to change. This is particularly so when the learner is required or encouraged to work alone in the computer lab or at home.

Regarding the role of the teacher in educational technology, several studies have predicted a shift in the role of the teacher, a shift away from teacher-centered teaching and in the direction of more learner-centered teaching (for example, Berge, 1999). It must be mentioned, however, that there are some who warn (e.g. Murray, 2000) that applying educational technology will not necessarily lead to learner-centered teaching. She refers to a study by Hawisher and Selfe (1995) which found that even in electronic communication environments, instructors still tend to dominate discussions exactly as they do in face-to-face modes. For online learning to be successful and achieve its ends, therefore, teachers must realize the necessity of abandoning teacher-centered teaching and helping their students become autonomous.

The need for changing the role of the teacher started to appear with the advent of communicative language teaching. In CALL, the role of the teacher as a guide in helping learners become independent and take responsibility for their own learning is emphasized. Learner autonomy, an integral aspect of online learning, called for changing the teacher-centered modes of teaching. In order for the learner to be successful in language learning using online technology, the learner must be aware of factors such as his / her own learning problems, weaknesses and strengths, learning style. It followed that the teacher's role in computer-mediated environments shrank in certain aspects and expanded in others.

With the numerous EFL resources available online on the Internet, the teacher is no more the sole source of input in the target language (TL), especially in foreign language settings (as opposed to second language settings, where target language input is available outside the classroom). CALL and online multimedia can now provide the learner with a huge variety of sources of input. The teacher is not any more the only source of knowledge and information about the TL language and culture, nor is the teacher the sole source of reliable feedback on the learners' performance. All these roles have been taken over by the computer. Now, the teacher guides the learners to the software programs that can best help them work on problem areas and monitor their progress. The current developments in web-based learning take the teacher's role even a step farther. Learning does not have to take place in classroom or even school environments. The result is that new forms of interaction between teacher and learner must emerge (Berge, 1999; Feenberg, 1999b). Interaction by means of email seems to offer an excellent channel of authentic communication in this regard. Feenberg (1999b) discusses aspects of "de-skilling" the teacher as a natural outgrowth of the new developments in educational technology. Some of the typical roles of the teacher can be taken over by the computer. The teacher's role as deliverer of information, for instance, has been already taken away by multimedia programs and the Internet. Lists of FAQs, Feenberg suggests, can be prepared to answer student questions in

distance education, thereby, taking away another of the teacher's roles. Multimedia programs, as mentioned above, can be adapted to students' learning styles. Feenberg, moreover, predicts that grading student essays will soon be done by the computer using intelligent software programs.

The teacher's role in this context is that of the collaborator who guides and supports learners in their endeavor to achieve autonomy (Murray & Kouritzin, 1997). ESL pedagogy is witnessing a shift in the role of the teacher from teaching language to *helping learners know how to learn* (Holec, 1981; Hoven, 1992). In essence, then, the learning environment must be based on a structure that brings learners into contact with the language to be learned while encouraging them to assume ownership of the learning process. A sense of ownership can only be fostered within a set up which offers learners a wide range of choices, covering all aspects of the learning process form goal-setting to assessment. The role of educational technology within this framework is central. When at least part of the responsibility of learning falls on the learner who has access to online EFL resources during open access times, the teacher can use class time for more interactive activities (Hoffman, 1995/1996).

There are two important factors to consider in connection with making use of educational technology in developing countries and the role the trained EFL teacher can play in this regard. (1) Most young people have never had first-hand access to computers or the Internet. (2) Those who have access often do not make good use of the Internet, essentially because they are not aware of its potential. With the economic problem, unemployment represents a serious social problem. There is hope, however, in the globalized job market. But this is a market that is highly selective of its work force. People in Third World countries do not have a chance of competing unless they possess the types of skill that are required by that job market. And globalization requires that people connect in English (Pakir, 1999). The obviously major task of the EFL teacher is to produce English-knowing bilinguals. One can examine English-knowing bilingualism from the linguistic point of view and see how the "linguistic outcomes could lead to linguistic power or linguistic complacency" (Pakir, 1999). A no less important or challenging task stemming from the emerging informational technology realities relates to skills that feed into language use and shape a way of thinking typical of the digital age.

Perhaps the picture of the totally de-skilled teacher is still distant, and especially so, in the Third World setting. While some aspects of the teacher's role in teacher-centered environments are expected to shrink, other aspects need to be expanded. The highly educated and trained EFL teacher can play a vital role in helping colleagues and students become aware of what the Internet can offer them. Not only can this teacher guide them to available resources that can professionally and linguistically be helpful, but more importantly this teacher can help make them aware of the skills needed to access and make the best of Internet resources. The teacher, like any individual, has different roles to play in society. Some of these roles pertain to professionalism, culture, and citizenship (Anderson, 2002). Teachers should not allow these roles to be compartmentalized; these roles should blend and interact and teachers should make it their goal to allow these roles to overlap (Ander-

son, 2002). Closely related to this is the fact that the EFL teacher enjoys a special advantage over perhaps teachers of all other subjects. EFL teachers are educators whose role has a socio-educational dimension that goes beyond the narrow definition of what they teach (El-Ezaby, 2002). The nature of language teaching offers the EFL teacher the opportunity to teach the whole person; this is the advantage and responsibility the EFL teacher has (El-Ezaby, 2002). Depending on their education, training, initiative and professional commitment, EFL educators can expose their learners to a wide range of information through the medium of English.

The EFL teacher's role, thus, should not stop at teaching the skills prescribed by the syllabus. Interaction in authentic situations using current topics of high interest to the learners guarantees sustained motivation. Oral discussion, whether for the goal of interaction or preparation for a writing assignment, can be very stimulating when the topic is the Internet. Whether the teacher chooses to assign Internet tasks as a means of collecting ideas for a writing assignment or an exercise in using critical thinking skills, the results can be strongly assumed to be rewarding. It can safely be proposed that many of the students who have access to computers with Internet connections will be motivated, even excited, to know how to do a search using a search engine. Many students, it should be noted, do not know about the existence of ESL sites, which they can access to work on developing their English language proficiency. Admittedly, the Internet, in one sense, can heighten unequal access to information and power (Warschauer, in press). However, when these discussions are done in a friendly, non-threatening atmosphere, it can be argued, even students who do not have access to computers can benefit by the mere fact of becoming *aware* of its existence, to say the least.

The English language teacher, by virtue of the nature of language teaching, can perform a valuable service in helping young people develop the requisite skills for competing for jobs requiring higher-order skills. Alerting learners to what intelligent use of the Internet can offer them can help learners with two vital components development and consequently of having an opportunity for a better chance in the globalized world, hence, a better future: better command over the English language and the critical thinking skills needed to achieve this end.

Language acquisition requires exposing the learners to input in the target language and giving them opportunities for interaction in it. More people are steadily getting access to computers with Internet connections in home environments. Coupled with this is the fact that access to facilities at Internet cafes is becoming easier and cheaper. This makes it incumbent on the trained EFL teacher to discuss with the students how their English language skills can be improved through accessing different Web sites. In addition to presenting the Internet as a valuable resource for language learning, the EFL teacher can point out the skills that can be developed through exploring and evaluating sites and how developing these skills closely bears on giving them better chances of having better, more competitive jobs. The precious by-product of improving proficiency through performing EFL activities online is the development of higher-order thinking skills, skills crucial for individuals to compete on the globalized job market. Discussing the resources available on the Internet with the students offers an exciting and motivating topic to most learners.

English as a foreign language teachers need to brace themselves for a new, expanded role that extends beyond the physical environment of the classroom by preparing their students for the emerging realities of globalization. Knowledge of the English language in the twenty-first century is the means through which the developing world can "internationalize with English"; this is because "internationalization is no longer optional but inescapable" (Pakir, 1999, 113). Discussion with teacher colleagues of some of the sites that offer resources to the EFL teacher represents another aspect of expanding the role of the educated and trained teacher. Most teachers in Third World countries lack awareness of what the Internet can offer them in terms of teacher training and teacher education or in terms of ideas for classroom activities and lesson plans. Pointing out some sites, discussing methods of searching the Web, and providing colleagues with some useful URLs can be a first, but crucial, step in directing colleagues in that direction. One does not need to describe how this can help not only improve the quality of teaching but how this can be reflected on the learners themselves.

Conclusion

The developments in educational technology and accessibility of computers and the Internet have created new realities that cannot be ignored. This is particularly so in developing countries. The extremely fast pace of developments in technology can mean that developing countries have no chance of catching up with these developments. The role the English language is playing in being the language of the Internet calls for reexamining the goals of teaching English as a foreign language. Good command of English is required to access the Internet. But perhaps more importantly, good command of English is required to compete for jobs on the global job market and publish research in international journals. If one of the problems facing acquisition in foreign language settings is limited exposure to input and rare opportunities for practice and interaction, the Internet resources, including EFL sites now available online can help a great deal in this regard. The problem, however, is that most schools and universities in developing countries do not have access to computers, and when they do, the computers are in most cases not connected to the Internet. The promising thing is that individuals are increasingly having access to the Internet on their home computers. Unfortunately, however, even with access to the Internet, people need guidance with what can be done using this enormous resource.

The nature of language teaching lends itself to allowing the teacher a more extended role than simply covering the syllabus. Topics for oral discussion, which aim to help the learners produce input, can vary to cover a wide range of topics of interest that can help build not only the learners' competence in English, but more crucially can alert them to the developments currently taking place in educational technology and the EFL resources available online. The expansion of the role of the technology-trained teacher becomes part of this teacher's role as an educator and citizen who seeks to help create a generation of learners and future professionals possessing the skills and types of knowledge needed to help their countries play a more active role in the technological developments that are changing the face of the world.

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Designing a Web Site for Practicing the Listening Skill in Arabic

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Introduction:

This paper presents a website for teaching listening that is being developed at the Arabic Language Institute at AUC. The site is intended for elementary level students and the materials are entirely in Modern Standard Arabic. It can be used by teachers inside class, or to assign a listening homework for their students. It can also be used by learners who want to practice and improve their listening skill on their own. The materials included in the site can be easily integrated with the text books used here at the ALI or outside.

The reason why we thought of this project was mainly the scarcity of such materials for the elementary level students. Therefore, when we were assigned elementary listening classes, we compiled these materials and then we thought of making them accessible through a medium that everyone (teachers and students) can access.

Content of the site:

The materials incorporated in the site, try to achieve two goals:

- First, they try to meet the requirements stated in the proficiency guidelines for elementary level students. So we try to cover the content and functions that students at this level are expected to learn. We do not cover the functions that are performed in colloquial Arabic, such as greeting people. The site focuses only on Modern Standard Arabic.
- Second, we try as much as possible, to stay close to the textbooks that the students use at the Institute and other widely used textbooks. As far as language structure is concerned, we stay as much as possible close to the structures introduced at this level of proficiency.

Some of the materials are authentic, such as weather forecasts, advertisements, and news broadcasts. The rest of the materials are written by the developers of the site to recycle vocabulary and structure presented at this level of proficiency in new contexts.

The site contains different kinds of listening activities. They range from listening to sentences to listening to longer passages. So the length of the texts varies. Also the task that the students are required to perform varies. In some activities they are asked to extract information from the passage they hear. In other activities a more thorough comprehension of the passage is required. We also try to use visual aids whenever possible to prepare students for what they are going to listen to.

Description:

The site contains eight entries:

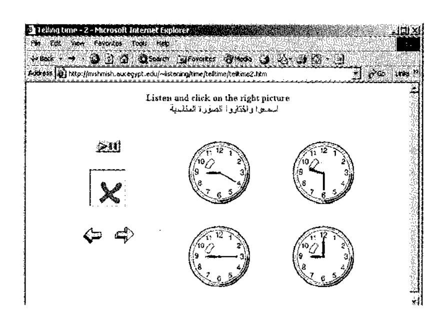
1. Time
2. Family
3. Description
4. Professions
5. Stories
6. Elementary Media
7. Weather broadcast
8. Advertisements

These entries represent some of the main language functions that students at this level of proficiency are expected to learn. Following is a description of each one of these entries:

1. Time

In this entry there are two activities. In the first activity, shown in Figure 1, students listen to short sentences telling time. After listening they have to choose the correct picture that matches what they listened to by clicking on it. As soon as they click on the correct picture they receive the feedback from the box on the left. Then they move to the next sentence and so on.

Figure 1

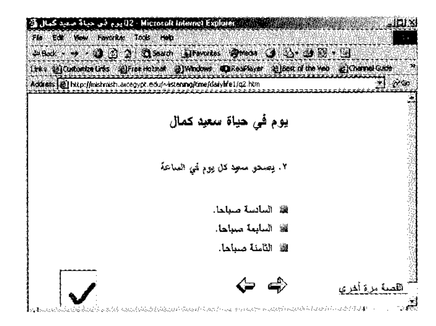


In the second activity, shown in Figure 2, students listen to passages describing the daily routine of some people. The passages contain the time element as a function rather than just telling time. Students can listen to the new vocabulary before listening to the passage. Then after listening they have to answer multiple choice comprehension questions. They choose the correct answer from a multiple choice and they receive the feedback from the box on the left of the page as soon as they choose the answer. Figure 3 shows an example.

Figure 2



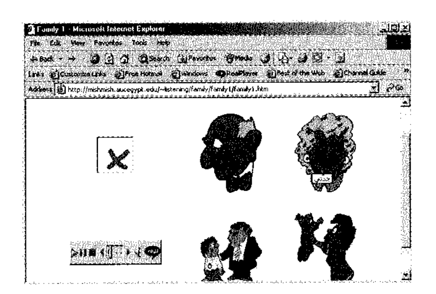
Figure 3



2. Family

In this entry students listen to a number of people talking about some family members and they have to decide who this member is. They make their choice by clicking on the picture that they find matching to what they listened to, and the feedback appears in the box on the left as shown in Figure 4.

Figure 4



3. Description

Description is an important language function that is divided in this section to: (a) describing people, (b) describing places, and (c) describing scenes.

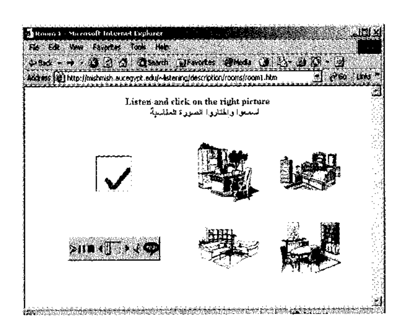
(a) As for **describing people,** students listen to short passages talking about a person and they have to look at the pictures and guess which person is being described. By clicking on the picture they receive feedback as shown in Figure 5. Describing people involves colors and clothes that are important proficiency tasks for the elementary level.

Figure 5



(b) As for **describing places,** students are required to listen to some passages describing certain rooms in the house. Then they choose the picture of the correct room that is being described. The feedback appears in the box on the left as shown in Figure 6.

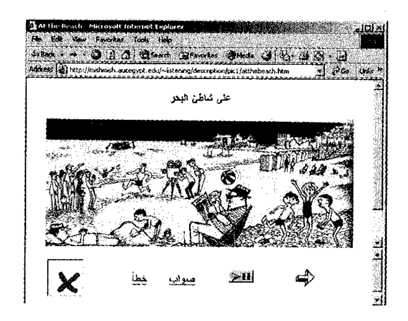
Figure 6



(c) As for **describing scenes**, students listen to sentences describing a certain scene, such as the scene at the beach or on a crowded street. Then they decide

whether the sentences they listened to are true or false based on the picture they see. Like the other activities, they get the feedback from the box on the left as shown in Figure 7.

Figure 7



4. Professions

In this entry, students listen to people talking about their work and describing what they do. After listening, students guess the job of the person talking by clicking on the picture that indicates the profession. They get feedback from the box on the left as shown in Figure 8. In addition, students answer comprehension questions to make sure they understood the main ideas and some details in the passage.

Figure 8



5. Stories

This section of the site contains stories that are based on pictures, stories of Goha, and stories from Kalila wa Dimna. Goha is a popular character famous by his funny stories. As for Kalila wa Dimna, it is originally an Indian book that was translated into Arabic in the 8th century. It is considered the first book in politics during the Abbasid period. The characters of the book are animals. This section contains simplified stories from this book. Students are supposed to listen to the stories and answer comprehension questions. This activity is to enhance the narration function that students at the elementary level are expected to learn. In addition, this section, contain stories that are based on pictures. These stories are written by the developers of the site. Students look at the picture, listen to the story and then answer the comprehension questions given to them. Like all the other sections, students receive an immediate feedback as soon as they answer the questions. Figure 9 shows one of the stories of this section.

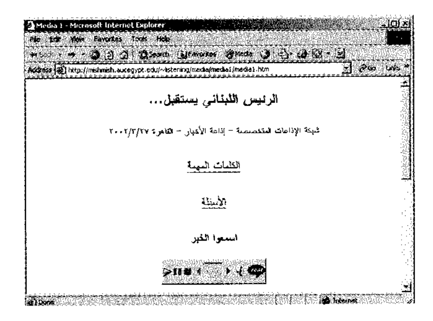
Figure 9



6. Elementary Media

According to the proficiency guidelines, students at the elementary high level are expected to understand some headlines and short news broadcasts. In this entry, they are introduced to very short selections of news broadcasts. Students are introduced in this entry to the important vocabulary words essential for the news before listening, then they listen to the selection and answer comprehension questions. Students receive the feedback from the feedback box as shown in Figure 10.

Figure 10



As for the **seventh and the eighth entries (weather broadcasts and advertisements)** they are still under development. They will include activities that will follow the same format of activities in the other entries. ■

Elementary Research Portfolios: Using Information Technology in the English Classroom

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Introduction:

When students first come to the American University in Cairo, and enter the English Language Institute, they have only basic computer skills. Although more and more students have computers at home, they mainly know only how to play games or look up a few things on the Web. They do not have the idea of a university being a place to search for information. They think of school as a place to be filled with information to memorize.

Usually teachers stick to the objectives of the Intensive English Program, and cover the various topics and skills the students are supposed to learn about. However, this particular semester, Fall 2000, I wanted to go a step further and to try to do as Socrates did, to teach the students how to question – how to use inquiry to empower themselves. (Chris 1998, p. 69) I wanted them to become curious about what was going on around them, to question things, and then to search for answers to their questions.

Expanding on the objectives we have for our students in the Intensive English Program, I decided to try a project where each student would choose a different theme which the ELI lessons are based on, and develop questions to search for answers for. They would then go out and use the Internet to exchange ideas with keypals, to look up books and articles in the library, and to do Internet searches. The search for answers to their questions included the integration of materials from each of their teachers of each different skill: reading, vocabulary, writing, grammar and note-taking.

As the semester progressed, they would then compile all the information gathered on each individual topic into portfolios, which were then graded and shared with their classmates. At the same time, they would make a short written summary of their findings to photocopy and distribute to each of their classmates to study. I hoped that this would be a project-based task, which would help them to think critically. (Warschauer 2000, p. 519-520). This combined the basic word processing skills they need with the learning of English, to prepare them to be able to write essays correctly enough to join and participate in regular university classes, and to meet the expectations of their future academic professors.

Overall objective:

The first step was for each student to choose a different theme to be curious enough to do research on. In the English language Institute we try to have the students obtain knowledge, do critical thinking, form opinions, and then be able

to write about general topics such as such as parents, crime, education, the future, technology, family, women's liberation, etc.

In secondary school, the students had been used to having information simply told to them, in order to memorize it, and so they needed training in how to consider a topic with a curious mind, and to consider various alternative solutions to a problem. For example, for the theme of education, I helped the student make a list of questions to be curious about, such as the issues of private vs. public schools, required classes vs. electives, the value of extra-curricular activities, the need to be well-rounded vs. being an expert, coeducation, etc.

My co-teachers and I tried to teach the students at least the basics of critical thinking so that they could learn to recognize bias, fallacies and assumptions, in reading books and magazines, in reading the Internet, and in discussions (Johnson, 1998). In doing this project where each student searched for answers to separate questions, I was hoping to instill the idea that students should come to the university to ask questions, and then to search for answers to these questions.

Getting information from e-mail:

Students nowadays come to the English language Institute with knowledge of how to use a computer for games and for chatting. When they write in a chat room they use all kinds of abbreviations, as well as a lot of Arabic transliteration. What we try to teach them during the course of the semester is that e-mail can be used for doing research, and for getting answers to questions one is curious about, realizing that one then has to pay attention to the reader. If the correspondent is a serious one, the writer has to use good English, and has to proofread, lest errors lead to a misunderstanding.

In order to help teach this, my students had a cross-cultural exchange with keypals at a university in Arizona, where the students are native English speakers who are taking courses in cross-cultural communication. The students had to learn that when writing a friendly but formal letter like this they still have to use proper English, not with the shortcuts that are so prevalent in our students' e-mail.

As described in Warschauer 1995, my students were able to do comparative investigations, where students on both sides of the ocean could discuss serious topics. All semester, I tried to stress that if you want to get your message across, you have to write for the particular reader. It was because of this that one student was able to elicit a long response to her e-mail about gender roles, which was meant to be an informative cross-cultural discussion.

On the theme of culture shock, another student received a great story about the difficulties a South American girl had encountered when her family had moved to America. Our ELI students soon learn that if they do not write well they do not get their message across.

Getting information from the Internet:

In addition to getting information from keypals, in the ELI computer labs the students learned how to do searches using such search engines as Google. The students soon discovered that the answer to any question could be found by

looking on the Internet. They far surpassed their teachers in their ability to track down information and pass on the trick to their classmates.

One student found a perfect site on education in Egypt, specifically on the topic of Egypt's war on illiteracy. No one could have asked for anything more precise. Nowadays, any student can get beautiful colored information on any topic, just by knowing how to do a search.

The issue of plagiarism becomes difficult at this point, since students would wonder why they should bother trying to put something into their own words when it is already said in a perfectly wonderful way on the Internet. They are proud of having learned to copy and paste. So, what we try to teach is that they must learn to summarize and to cite their sources, and not try to claim that the information is their own. We must make them aware that a reader can catch plagiarism with a tool such as Turnitin.com, (Hafner, 2001.) Students are willing to NOT plagiarize, if they are taught how not to. Of course, to put ideas into one's own words is difficult unless one has a good command of the language.

Getting information from interviewing:

In the attempt to teach students to have curious minds, to ask questions, and to search for answers, there are lots of relatives and friends around they can ask opinions of, and it is good if the students learn to tap this source. Parents and grandparents would probably be more than happy to tell them their opinion of the world's problems.

For example, one girl was researching the theme of the generation gap, so she interviewed various members of her family, and came up with really interesting comparisons from a completely different perspective about who in the past was able to get a university education, who was allowed to go out on weekends, how there were more group than individual activities, how there was little transportation to weekend getaways, how they had to read instead of watching television, how women nowadays are more daring, how people have less respect for each other, and how the speed of life has increased. I don't think that she would have listened to her elders if she had not had this assignment.

Getting information from the library:

Training in how to use the library is essential to any AUC student. In the ELI we try to give them the basics of how to find reference materials such as atlases and encyclopedias, how to do a library catalogue search by computer, and how to find a book on the shelf. After doing this individualized project, they were to include their findings in their portfolios.

In order for the students to learn the basics, I planned with a librarian a minute-by-minute schedule for the library tour, in order to cover only what was important for my level of students and for the amount of time allowed. Then I planned, with the librarian, a minute-by-minute schedule for the time in the Library Instructional Lab, so that only the basic steps to doing an on-line search would be covered, based on what I had already taught the students myself in the classroom, based on what they already knew about doing searches, and based on what I wanted them to end

up with for this day, which was the ability to search the computer for a call number, and then be able to find that book on the shelf and to take the book out of the library.

I made sure the students knew that they had only learned a LITTLE of what there is to know about the library, so they realized that they would still need more lessons when they got to the next level of learning. In future years they will still need more work on using indexes and abstracts, on doing more advanced keyword searches, on using on-line databases, on including citations, on using the micro-forms, on using the Rare Books Library, etc.

Integrating information from the reading and vocabulary teachers:

Besides having informal meetings with my co-teachers, we met formally once a week, to discuss articles and vocabulary to go along with the composition themes, so that the information would be reinforced from many angles, and to give the students enough information so that they would be able to write better summaries. The more integrated the skills are, the longer the retention of these skills lasts. (Selinker & Tomlin, 1986)

Word Processing:

At the same time that the students prepared to submit their portfolios, they made a short page written summary of their findings, to photocopy and distribute to each of their classmates to study. Part of writing this summary required learning basic word processing in the computer lab.

The students could have given an oral presentation to show their findings, which helps the students gain confidence in doing so in their future AUC work. However, this particular semester I wanted to concentrate on their writing, especially on writing summaries.

At this point the students also learned the value of proofreading, and how important it is to not turn in a paper to a professor in the future if they have not proofread it. By the end of their studies in the ELI they are capable of writing well, and they can do so whenever a professor refuses to accept a paper that has not been proofread carefully.

Portfolio:

At the end of the semester, the students each then compiled all their accumulated information into portfolios, which we eventually passed around the room for all to see. These portfolios were graded according to certain criteria, such as having an index, having a good summary, having information from a variety of sources, etc. The students had suggested giving a prize for the best portfolio, but there were so many good ones it was hard to decide.

Conclusion:

I was extremely pleased with the results. The students were searching for answers for the purpose of telling others, rather than sitting in a classroom memorizing what the teacher said. They retained a lot more useful information

when working individually, since they received the knowledge just at the speed their individual brains wanted it, neither too fast nor too slowly.

The project worked very well, and integrated all the English skills nicely, which is important for preparing for real university life. It is a lot of work for the teacher to supervise a different lesson for each student, but in the end it is worth the effort, and the students learn to work independently. Most important, the students had a semester-long goal of searching for knowledge.

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English Language Teaching & Technology in the Middle East: Egypt, Jordan & Tunisia*

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Abstract

A report on initial findings of a comprehensive study of English language teaching (ELT) in the Middle East, this paper addresses three countries: Egypt, Jordan and Tunisia. By examining the state of ELT teacher preparation, particularly in terms of technology and its uses, the current report has three functions: 1) to provide a significant and timely addition to scholarship in language teaching and learning; 2) to provide data and analyses useful to policy makers and scholars in ELT for Arabic speakers, Middle East Studies, and sociolinguistics; and 3) to present a model for ELT study in other Middle Eastern countries.

Introduction

For better or worse, English language is essential to academic and professional success in the Middle East. As the dominant language of international business transactions, international law, scientific specialties, international relations, and technology, English proficiency is critical for effective communication to all educated people in the region. The ability to access information in English and to be able to use that information in order to talk and write about complex and interesting problems is basic among the skills of the college graduate in any Middle Eastern country.

In the past five years, thanks to surges in technology and economies in "the first world", there has been a remarkable growth in the quantity of available information. The desire and urgency to share it is a direct result of this availability.

Although one can access and transmit information on the World Wide Web in other languages, the vast majority of this information is accessible only in English. With over eight million web sites currently available, according to one source, 63% of those are accessible only in English. Many more bilingual sites appear in English and some other language (cyberatlas.com).

* The author thanks Ms. Marwa Baza, Fellow, TEFL Program, American University in Cairo, 2001-2002, for her assistance with the preparation of this paper.

There is little doubt that language acquisition is made both more effective and more enjoyable with technology than without it. Empirical research documents this fact in dozens of studies over the past decade. For a representative sampling of the research supporting this position, readers are encouraged to see the following: Chapelle and Jamieson, 1989; Cross, 1990; Esling, 1987; Flowerdew, 1993; Jamieson, et al, 1993, to name only a few.

The theoretical argument backing these studies goes something like this: When students are provided more input from more varied sources and when they interact using that input, they are more likely to learn than if they are deprived of that input and if they do not interact. Technological resources offer students both more input and more varied input, as well as more opportunities to interact using that input.

Testimonials from student users of technology and teachers who use technology in the classroom also confirm it. Pennington (1990) reports moderate increases in literacy test scores following technology training. Indeed, we know that learning is faster when technology is applied (tasks take approximately 30% less time in settings where technology is used compared to those cases where there is no technology) (Chapelle, 2001). We know that learning is more effective in contexts where the student has access to technological resources that he/she knows how to use.

In order to use technology effectively, students need new skills in reading and writing, but also in other areas, what has been coined "information literacy." Information literacy is defined as the ability to find, identify and use information effectively for academic and other purposes.

At the same time that the Web is dominated by English-medium sites, non-native speakers of English far outnumber native speakers as users. According to Global Reach, a web site containing regularly updated global Internet use statistics, a total of over 500 million people use the Internet worldwide. This number includes the following breakdown of native speakers vs. non-native speakers of English: 220.4 million native speakers of English compared with 292.7 non-native speakers. It is noteworthy that recent estimates among linguists indicate that non-native English speakers (worldwide population totals) outnumber native speakers 4 to 1. In other words, for every native speaker of English, there are four non-native speakers (Strevens, 1990). Web use in the future is likely to be dominated by English. But in the meantime, many people worldwide are accessing web-based materials in English today who are not, themselves, native speakers of the language. The role and status of English as a second or foreign language teaching for web access and computer use, in general, is well established.

To be fair, we must recognize an important counterpoint on the topic of technology use in the English language classroom: Many teachers are concerned about the potentially perverse influences of the computer on "prototypical English" (or perceived prototypical English). These detractors say: What is the computer doing to English – the Web and word processing packages? Others are concerned about the potential risks that the Internet wields over the morals and

sensitivities of young children who are allowed free rein over the World Wide Web and Internet. And still others want to point out that language is best learned in interactive settings. These critics say that we cannot interact when we sit alone in front of a computer screen. Indeed, these are some of many concerns registered by some teachers and some parents, too, about the potential harm caused by free roaming of the World Wide Web.

The reality is that the World Wide Web is here and will continue to be a force for change worldwide in education, generally, and in English-medium education, in particular. We cannot make it go away, even if some of us may wish to do so! We must embrace Web use and teach students critical thinking and judgment skills for responsible use of the World Wide Web and Internet (England, 2002).

In addition, there are many unique opportunities for interactive language use (in any language and certainly in English) in chat rooms, on e-mail, and in other web-based settings — opportunities for self-paced learning, and for the power to address the needs of learners who fail in traditional language classrooms (Sennara, 2002, supports the role of the Internet as an excellent new opportunity for addressing the needs of shy students). Withholding Web opportunities for students and / or teachers will only encourage its use among students who want to access it.

What skills can learners hope to acquire by enrolling in English language classes that include exposure to and use of technology? The following is a short list of those that have already been identified. There are certainly others.

1. Reading Skills: critical thinking, literary analysis, skimming and scanning, grammatical analysis and vocabulary use in context, to name a few;
2. Cooperative Learning Skills: interacting with partners on a group research project or other participative task, negotiation of roles and meaning on projects through electronic communication media;
3. Information Literacy: searching, finding, and selecting information for use on a given project or activity); and
4. Authorship: identifying and articulating an author's audience and purpose

Overview: English-medium Computer Use by Arabic Speakers in the Middle East

Native speakers of Arabic worldwide use English to access information in order to pursue their studies. As in geographical contexts worldwide, students of all ages in the Middle East use the Web. Professionals use e-mail for communication and the Web for doing research. Scholars in all disciplines want to know and be able to use what is available in English on the Internet (Pastore, 1999).

But many Middle Eastern countries face significant economic and social challenges. What are some of the potential benefits for increasing technology access in ELT in the Middle East?

Illiteracy is one challenge that may be, at least to some extent, ameliorated with new technologies. In some settings in the region, girls use the Web in environments where they would otherwise have almost no access to social and cultural groups outside of their immediate family and community. Chat rooms, e-mail and Web-

based research address the needs of these girls as they begin to find their place in a broader world than that with which they are familiar. Handicapped students who would otherwise be confined by their physical limitations can now reach out and meet new friends on the Web. Indeed, there are many groups whose communication needs and whose academic and professional interests and requirements, are met through Web access. Much of that information is in English.

Among native speakers of Arabic, estimates are that 4.1 million are currently Internet users. By 2003, that number is predicted to increase to 6 million. In spite of the challenges to widespread Internet use in the Middle East, there is little doubt that English medium web use, if not already, will soon be considered a necessary competency for university graduates in the Middle East (Cyberatlas.com, 2002).

How are non-native speakers of English, and Arabic speakers in particular, learning how to use the Internet? And once these users access web resources, how are they being taught to use those resources in order to meet personal and/or professional goals?

In order to do this, Arabic-speaking Internet users in the Middle East need English skills. One group, university students, are a particularly important group to watch in a rapidly expanding population of non-native English speakers who regularly "log on," "surf the web," and use tools of technology for academic and professional purposes. For the reasons described above, effective use of technology requires English skills.

In addition to the students, it is of interest to know more about how teachers in the Middle East acquire the skills necessary for addressing their students' technology information needs. English teachers are responsible for helping students develop necessary skills for access to and comprehension of English-medium information and the skills to express themselves in English using that information. How do university teachers in the Middle East acquire skills to teach their students to use the technology? How do Arabic speakers in universities in the Middle East learn how to use technology – to access the wealth of information on the World Wide Web; to use word processing tools to write about what they know; and to communicate with others?

The current paper is an initial report that attempts to identify some significant questions for technology applications to ELT in three countries in the Middle East: Egypt, Jordan and Tunisia.

Statistical information on the numbers of English language learners and users in universities in these three countries is important for the completion of a valid project on this topic. In Egypt, for example, statistics are available from the Ministry of Higher Education. However, obtaining the information required to do this research is not for the faint of heart. It is not easy to access records on English language use, to identify instructional models for teaching English for computer literacy, or to determine the extent to which computer use is required for the completion of an academic degree.

Still, some web-based and anecdotal information is available and is presented here on these three countries. With these initial findings, this report provides a starting point for continued research. The paper concludes with implications from

these findings for teacher education in the use of technology in the Middle East.

Note: Web sites of interest to those who want more information on the role and status of computer-based instruction of the English language in Egypt appear in the second of the two-part *References* section at the end of this paper. In addition, more statistical information on Egypt, as well as the two other countries (Jordan and Tunisia) investigated in the current brief report, appears in the appendix

Egypt

With a population in 2000 of just a few short of 63 million people, Egypt is a significant Internet consumer. Estimates range between 440,000 and 455,000 users nationwide. Egypt leads the three countries in number of users. According to a paper presented by Kamel and Ragaa (2001) in a previous issue of this journal, the number of Internet users in Egypt in 1996 was estimated at 20,000. Today, the number is over twenty times that number at 440,000, or more. Another way of looking at the Internet use picture in Egypt is that for every Egyptian using the Internet only six years ago, there are 20 users today in 2002. Knowing more about specific ways in which the Internet is used by university students in Egypt, and how ELT professionals are trained to meet their needs, is critical to an understanding of how those needs will be met six years from now and beyond.

Indeed, the Web has arrived in Cairo - and across Egypt. But what is happening among the future leaders of this country, among university students who need both English and Web-based information in order to further their professional and academic interests?

Egyptian national university students, the focus of the current study, are an important group as they represent the future leaders, both in professions and academically, in Egypt. Little information is available on their English language medium instructional experience and training, and less is available on the training of their teachers. With a curriculum that is generally based on reading skills for professional purposes using traditional teaching techniques, English language teaching programs at national universities have relatively weak resources for helping students gain skills in technology. Their teachers, unfortunately, are also poorly supported in their efforts to learn new skills. In most cases, skills for using English-medium technology and information literacy skills are relegated to the computer science and computer information systems curricula and are ignored for the most part in the English language curriculum.

AUC, of course, is a different story. Representing the values and needs of the elite in undergraduate education, AUC caters to a selected group of students. With information literacy near or at the top of the list of priorities for undergraduate education, AUC offers English-medium computer assisted instruction in the English Language Institute, the Writing Program, and in the library. With their generally superior English-medium skills, AUC graduates enter professional roles throughout Egypt - in all cities and provinces, across Cairo and elsewhere, and in many and varied professional and academic specialties. AUC has set a standard of excellence in Egypt, both in undergraduate education, and in information literacy (Spencer, 2001).

AUC graduates know how to access the internet, to identify and use information that they find in those visits to the World Wide Web, in order to address academic projects, in the short-term, and for professional and academic purposes following completion of their studies and enter the work force or further graduate academic study in Egypt, elsewhere in the region and beyond.

But what is happening in other quarters, beyond AUC, in universities and language schools in Cairo and outside? How are computers used? How are computer skills learned and taught? Describing and analyzing the role of computer use and the English language as a part of computer use among Arabic speakers beyond AUC is worthy of study.

For the hundreds of thousands of students in universities across Egypt, the following questions are currently under study:

- What are the needs of the students in university classes where technology is used and taught?
- What is learned in English classes where technology is used (about English and about the content area)?
- What are students doing in the hundreds of Internet cafes found across Egypt (even in small towns in Upper Egypt and in the Western Desert) and how are they learning to do these activities?

For teachers, one might seek insights on these questions:

- Who is teaching English-medium technology-based skills in universities?
- Where, how, and to what extent are teachers trained and prepared to teach these skills?
- What are the factors that influence the teaching of English-medium technology-based skills in universities?
- Who (if anyone) funds skills development for teachers in the use of technology and English language?
- How is funding managed for the purchase of expensive computer equipment?

Answers to these questions are not easy to obtain in Egypt. The resources listed in the References section will offer statistical information (all found on the World Wide Web) on the matter of English language and computer-assisted learning and teaching in the countries under study. The status of English-medium, computer-based instruction in Cairo, alone, are difficult to uncover. The details on this instruction and how it is delivered and these skills and teaching in other parts of Egypt are even more of a challenge. (Note: A Summer Research Grant project sponsored by the American University in Cairo will follow-up on the current research and will attempt to address some of these questions in Egypt.)

Jordan

The picture in Jordan is a bit different. With a population of only a little more than 5 million, estimates are that 25,000 to 30,000 Jordanians, nationwide, are using the World Wide Web and the Internet. With unusually high literacy rates of 90%

and an established system of English common law, (combined with some elements of Islamic and Napoleonic law), Jordan enjoys a well-structured system of English-medium education. The role of English is, legally and in daily practice, a part of life nationwide. Many universities provide classes in English and require the use of technology. A summary of the data on this topic appears on the United States Department of State web site (see references section of this paper for the web address). The British Council offers courses in English for computer use and many Jordanian university (or university-bound) students enroll in them. Private language schools offer similar programming with equal levels of popularity.

But how are Jordanians learning English for web-based work? And how are teachers in Jordan prepared to teach the skills that people need to read and participate in web-based research and electronic communications? More research is needed, particularly carefully designed interviews, feedback protocols, and surveys.

Tunisia

Steeped in a francophone tradition of education, a brief look at Tunisia offers a very different perspective on the role and status of English-medium technology use. Universities and language schools in Tunisia have computers and students are able to access them for academic work. However, the extent to which the English language curriculum offers opportunities to develop one's skill in that medium of computer use is unknown.

Considered by World Bank statistics to be "a developing country," with a 29% illiteracy rate, Tunisia represents a potentially rich opportunity for growth and development through English-medium technology skills. What is unknown (and will be the focus of the next step in the current on-going research project) is the content of the English curriculum in terms of technology use, the role of English in national literacy projects, and the status of French and its accessibility on the Web. These issues lead to the following critical questions in an analysis of Tunisia's response to the computer age:

- Who is teaching English-medium technology-based skills in universities in Tunisia?
- What is the role of French-medium technology in Tunisian education?
- Who are the students in language classes that use technology? What are their needs?
- Where, how and to what extent are teachers trained and prepared to teach these skills in Tunisia?
- What are the factors that are influencing the teaching of English-medium technology-based skills in Tunisian universities?

Implications

It is possible to choose not to engage in a discussion on the role of technology in English language teaching in Egypt, Jordan and Tunisia. But the implications of such a choice are not without significant negative results. Opportunities for learners to join new communities of users – professional and social – are lost when

English or technology use skills are left out of the curriculum

For language learners in three countries in the Middle East, it is clear that English-medium technology skills are very important for success, if not for survival, in the new century. English language skills for both fluency and accuracy are needed in order for students to participate in international dialog on topics which are interesting and important to learners.

For language teaching in Egypt, Jordan and Tunisia, new paradigms for instruction are needed. Curriculum design, implementation and evaluation require additions and adjustments that allow for, indeed encourage, the teaching of English for Internet communication. Testing must also change to reflect the new technological tools. Linguistic corpora and other resources offer a new day for English language learning that requires students to learn to use language rules, not only to memorize them.

For language teacher training in these countries, efforts are needed to bring teachers up to speed on matters of technology and applications of technology in English language teaching. Teacher educators can no longer be comfortable in providing teachers with linguistic information on the sounds and grammar of the English language. The content of teacher education in these countries can and should be delivered using technological resources.

In addition to, not in place of, traditional content of English language teacher training programs are the following recommendations for new basic requirements for responsible teacher education in Egypt, Jordan and Tunisia:

1. More opportunities to apply linguistic knowledge (phonetics, syntax and discourse) to the real worlds of teachers;
2. Increased responsibility for developing new second language acquisition models relevant to the computer age (how do learners access information; how do students apply learning styles to technology based information; and what strategies do students use in their efforts to identify and use information on the Web)
3. Better efforts to train teachers to identify learner needs vis a vis technology and to deliver instructional lessons that meet those needs. In addition to individual differences in learners, the role of culture in technology use in second language learning and second language teaching is not currently well understood. And,
4. Improved tests that reflect the skills needed to use English in contexts where technology is required. The over-reliance on multiple choice type test items could be brought to a screeching halt with the application of new technology-based testing resources.
5. More research on how Arabic speakers use and interact with technological resources in order to improve their English.

Of course, gross under-funding of English language teacher education in Egypt, Jordan and Tunisia is one of the significant weaknesses in the possible implementation of these recommendations. However, the time is now to address

the critical role of teacher education in building English education, specifically, and education, in general, in these countries.

Indeed, with the coming of the Internet, it is a new day in English language teaching in Egypt, Jordan and Tunisia. More information is needed in order to set a course for language planning and policy, for funding in both English language and technology projects, and other areas.

English language teachers are in a unique position to provide students with the skills they need in order to improve their knowledge and skill in English. But as important, ELT professionals are in a position to provide students with access to content that is needed in order to meet academic curriculum requirements, to join professional communities (noted in the introduction to this paper) and to be world citizens. The established sub-specialty of English for Specific Purposes is one model for the delivery of such instructional programs.

In order to support ELT professionals in their effort to keep current and to manage students' learning in "newly wired" classrooms in Egypt, Jordan and Tunisia, teachers need support from development agents and sponsors and university administrations.

In so doing, the potential dividends are great. Universities stand to have a better opportunity for high-quality English language teaching and learning, as well as the action research needed to address the impact of technology and knowledge about Internet use. Better design of sponsored, public and private university English language programs and tests is also a potential benefit of such investments in technology for ELT. And, finally, with better information and knowledge about technology in ELT in the Middle East, teacher training programs will be revised, updated and tailored to more directly meet the needs of the teacher facing classes of students eager to know and eager to use English-medium technology.

More and better efforts supporting technology applications for English language teaching promise much for Arabic speakers in the Middle East and for those elsewhere worldwide who wish to communicate with them in English. Without these, more illiteracy, more poverty and more political turmoil is a sure thing.

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Pastore, Michael (2002): Arab Internet Use Growing. Cyberatlas.com. July 7, 1999.

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Web Sites of Interest

Several sites with statistical information on English-medium World Wide Web Use in the Middle East:

HTTP://WWW.CYBERATLAS.COM
HTTP://WWW.GLOBALREACH.COM
HTTP://WWW.AJEEB.COM
HTTP://WWW.STATE.GOV
HTTP://WWW.BRITISHCOUNCIL.ORG

APPENDIX

Statistics of Interest

POPULATION and ILLITERACY RATES (as of 2000)*

Country	EGYPT	JORDAN	TUNISIA
Population	62,955,218	5,178,349	9,700,000
Illiteracy Rates (%)	44.6	29	10

*** To be identified as "a developing country," the illiteracy rate must be 24.6% or higher. Illiteracy is defined as the inability to read and write in Arabic. No statistical information is currently available on English language use in Egypt, Jordan and Syria.**

Source: World Bank Statistics, 2002 ■

Panel Discussion
Information Technology and the Global Village

Panel Moderator: Dr. Ashraf Abdel Bar,
Department of Computer Science
Panel Members: Dr. Robert Switzer,
Department of English & Comparative Literature
Dr. Nagla Rizk, Department of Economics
Mr. Ramy El-Gawly, Computer Science Graduate
Ms. Aisha Mohamed, Fellow

Dr. Abdelbar:

On September 11th 2001, when the news of the terrorist attacks on New York began to break, nobody turned on the radio; people ran either to the Internet or to satellite television stations. The traffic on the CNN website was so heavy, the CNN server was not even responding to authentication requests. I, personally, was here on campus. I remember typing www.cnn.com on my browser and getting back the message saying that there was no such server. For a minute, I thought, you know, "Has CNN itself been bombed or something?" That is why I went home and turned on "Al Jazeera". Everything that happened in the days that followed 911 was immediately transmitted around the world through technology creating a single global public community of opinion, to an extent that perhaps had not happened in any past world crisis.

I was recently in El-Warraq, which is a semi-rural suburb of Cairo where the Cairo Gas Company happens to be completely located. I needed to have a document faxed to me so I said to a friend of mine who was with me, "Why don't we find a fax place?" and the person with me said, "Where do you think you're going to find a fax store or a store with a fax machine here?" We walked around and within walking distance, we found 4 Internet cafés offering Internet access for 5 or even 4 pounds an hour. All four of them had Internet, only one had a fax.

Teenagers in El-Menoufia, Egypt's heartland probably, now routinely stay up all night; and I've personally seen this, chatting with other teenagers from the United States, Europe, Asia, even Israel and Iraq. I personally know someone who's currently married to an Englishwoman that he met through an online chat room. These two people have been married for four years now. Living on two different continents, they probably would never have met were it not for the Internet. And at any other time in history, the likes of these two people would not ever have met.

For better or for worse, Information Technology is changing the way we live in very profound ways. The purpose of this panel is to explore the issues in a multi-disciplinary form. Let me begin by introducing the panelists today. Dr. Naglaa Rizk from Economics, Dr. Robert Switzer, a philosopher from the department of

English and Comparative Literature; Rami El Gawly, a distinguished Computer Science graduate, and Ms. Aeysha Mohammed, a fellow from the office of the Dean of Humanities and Social Sciences. We're going to begin by opening remarks from the panelists, and then we're open to questions; first within the panel, and then from the audience. And now to Dr. Rizk.

Dr. Rizk:

Actually, I'm going to make a small comment, which is not in my presentation, related to what Dr. Abdelbar just said. I'm a living example that the Internet works. I owe my PhD to the Internet. I was doing research in Egypt, my university was in Canada. I was traveling back and forth; mailing my supervisors; they didn't answer once, didn't answer twice. But when I got access to the Internet in the early 90's, thanks to AUC, I was done within less than 2 years, which was a miracle. I sent a 300-page thesis through the e-mail, which –to me- is a fantastic achievement. Anyways, given the title of the panel, what I want to talk about is globalization and the role of information and communication technology in breaking the bounds and development in the world.

I see globalization as something that we should accept as a given; we have to see how we can use information and communication technology to reach out to people and populations in less privileged parts of the world. Information and communication technology can be seen as the driver, the core driver, of globalization. It's the tool by means of which we can use technology to make people's lives better, to achieve "development" as we define it rather than just economic growth, which is a higher level of income per capita. Development means better life for people in perhaps less privileged parts in the world. In a world where we have 80% of the population living on 20% of the pie, we do need IT to make people's lives better. Now, I-Cities are needed to eliminate poverty, to reduce the marginalization of people in parts of the world, and to target equity on a much broader scale. What is so commonly known as the digital divide has to be addressed. The less privileged people do not have access to information; we need to target them. We need to use I-Cities to try to form what's called the "digital profiles". Now, I see this as improving people's lives from an economic point of view, from a social point of view, and from a political aspect. Knowledge is power. And, before the information revolution, knowledge was in the hands of the powerful and the rich. The new thing today is the threshold of access; the less privileged, as Dr. Abdelbar mentioned people in Warraq, do have access to this information. How do we use this knowledge to improve people's lives? We economists teach in introductory economics courses, we teach our students the definition of economics, how we can utilize resources to achieve the highest possible level of output given the constraints of limited resources, and we teach how the market solves problems of economic organizations. And one of the essential components of a market is knowledge; the flow and feasibility of knowledge. Now, the Internet and the access to I-cities can make this knowledge available in a way where the market can function a lot more efficiently than it is now, in the hope of getting less market failures. Optimization of the role of the middleman, reducing transaction cost, reducing the search cost, in

such a way that the economy can function a lot more efficiently.

When we talk about economics, of course we talk about electronic trade, and this is also a venue by means of which there is an opportunity. There is no guarantee that the opportunity will be utilized. There are a lot of challenges, and I have a list of them that perhaps I won't talk about now, but we can bring them up in the discussion. But the point is, there is an opportunity, to use I-cities for creating new areas of comparative advantage, better utilizing traditional areas of comparative and competitive advantage. That's on the economics side. On the social level, of course the use of I-cities for education, better research, research in different parts of the world cooperating together, e-learning, improving also health services, improving perhaps the role of the civil society, empowering the less privileged in the society.

There is a strong role for political empowerment, what you [Dr. Abdelbar] mentioned about the news and the media as far as wars, there is really no room for hiding or for lying to people; the consumer or the individual agent is much more aware now, much more empowered given the tool of the Internet. Given the fast development of technology, the convergence of the technology, these issues are becoming more and more relevant. The world is becoming a smaller place; there is definitely a need for governments, business, and individuals to find new ways of doing things, creative ways of communicating and producing and a lot more room for institutional development in our part of the world. There are many challenges, some that are unique to us, and others that are universal. These become even more pressing in light of our weakened institutions, unfortunately. For example, when we talk about e commerce, there are challenges to commerce that have been there before the "e" and there are new challenges in light the "e". So there is so much to do in that field and I just want to end – I am sure we will have a lot to talk about in the discussion – to give more time for my fellow panelists, with a small quotation: "It's not the strongest of the species that survive nor the most intelligent, but the ones most responsive to change." This is all we need to do, we need to be flexible. We need to be dynamic and find creative ways of doing things in order to have a better world. Rather than "haves" and "have-nots," it is the world of "knows" and "don't-knows," and the "knowledge-haves" and the "knowledge-have-nots" and the "knowledge-have-less." So we need to utilize that. Thank you.

Dr. Switzer:

First of all I want to thank Dr. Ashraf Abdelbar for organizing this conference. It's an opportunity for philosophers to sit next to computer scientists and economists and business leaders and people from different research directions. I'm really thrilled about that. And in fact, this research conference, in general, is a real opportunity for this kind of discussion across the disciplines, bringing together the whole university. I'm pleased to be part of it.

What is the "global village" effect? There is a lot to be said – a lot on both sides, the positive and the negative sides. I'll come back to this: I want first to say a few words about the term "global villag" itself, and about Marshall McLuhan, who coined the term.

McLuhan like me was Canadian, and in fact his presence / absence was still very

much part of the aura that permeated the University of Toronto when I studied there in the early 1980s. He died in 1982. His ideas are very closely tied to the 1960s; indeed, he had no small role in shaping what we think of as the 60s, particularly its self-understanding by intellectuals, and even more its self-manifestation in the media. The 60s, from the Vietnam War to the Paris riots of May '68 through Woodstock and the hippies and so on, was in no small sense a "media event."

And this is the point, of course. McLuhan was the "guru" of the media, especially television. He over-estimated its impact perhaps, but, most would agree, not by much. More importantly, he failed to anticipate the way in which television would be displaced, soon replaced even, by computer technology: technology which is dispersed, interactive, networked and out of control.

In 1962's *Gutenberg Galaxy*, McLuhan wrote, "The new electronic interdependence recreates the world in the image of a global village." [p.31] This was an idea he saw was well worth expanding on, and what he has to say in his seminal work, *Understanding Media* (1964, pp. 19-20) is worth quoting at some length, as it sounds today both quaintly outmoded, and strikingly prescient:

During the mechanical ages we had extended our bodies in space. Today, after more than a century of electric technology, we have extended our central nervous system itself in a global embrace, abolishing both space and time as far as our planet is concerned. Rapidly, we approach the final phase of the extensions of man: the technological simulation of consciousness, when the creative process of knowing will be collectively and corporately extended to the whole of human society, much as we have already extended our senses and our nerves by the various media. ...

In the electric age, when our central nervous system is technologically extended to involve us in the whole of mankind and to incorporate the whole of mankind in us, we necessarily participate, in depth, in the consequences of our every action. It is no longer possible to adopt the aloof and dissociated role of the literate Westerner. ...

As electrically contracted, the globe is no more than a village. Electric speed, in bringing all social and political functions together in a sudden implosion, has heightened human awareness of responsibility to an intense degree.

What McLuhan goes on to say about marginalized groups of his own day, such as "teenagers" and "Negroes," is true today of groups and peoples the world over, and I want to mention especially the plight of the Palestinians, vis-à-vis the West: I quote: "They can no longer be contained, in the political sense of limited association. They are now involved in our lives, as we in theirs, thanks to the electric media."

This issue of ethical responsibility and mutual implication in the global village is crucial. But as the above quotes suggest, McLuhan also felt the technology was leading us to a fundamental change, a "next step" in human evolution. With the move from print to "electric" media and now multimedia, McLuhan saw us moving into a new age, marked by simultaneity rather than linearity – a move from "hot" fragmentation into "cool" holism, decentralized, shifting, and dependent more on general pattern than specific details. (It may be helpful for some to note that, late in his life, McLuhan embraced the now well-known dichotomy of left vs.

right hemisphere as expressing the same basic oppositions.)

Computer technology, of course, brings both high definition (hot) and low-definition, imagistic, patterned (cool) information; it is a hybrid of the book, the television, and the telephone. And it is more than the sum of these parts—much more. McLuhan was right I think in predicting the emergence of new "forms of awareness" out of media changes. And since the technology doesn't just mediate but conditions the content, dominating it thoroughly, he was particularly prophetic in his famous slogan "the medium is the message."

The result of the ever-faster and more central flow of information is, again: inexorably, separate and discreet societies meld into a global village. But one thing that McLuhan seems not to have seen clearly is that it is a village in which some live in slums, cantons, outside the village proper – the "information poor" in a culture that increasingly defines itself in terms of the "information rich."

McLuhan was an optimist, both about humanity and about the effect of technology on us. Jean Baudrillard, a French social thinker who is one of the key figures leading the renewed interest in McLuhan, is much more pessimistic. As Baudrillard has argued, there is also the issue of cultural leveling, turning the "social" into the "mass" which is at once homogenized and "atomized"

We are hypnotized or as Baudrillard would say "seduced," by the hyperreal. Fashion, catastrophes and "events," and especially electronic simulations, from TV to computer games and Virtual Reality, all dazzle us, become more real than the real, more beautiful and more true than beauty and truth themselves. The danger, Baudrillard argues, is that one reaches the saturation point, a kind of delirium of change, and he uses McLuhan's word "implosion" to describe this: put schematically, sexuality becomes pornography; vision becomes voyeurism; and history and tradition are lost in the "intoxication of the moment." In short, it can easily become a kind of cancer in our midst. Spoon-fed on an endless diet of simulacra and shadow-plays, atomized and isolated like the people in the science fiction film "the Matrix," the inhabitants of our global village could easily become more like inmates than citizens.

All of which gives in very brief outline some sense of the enormous opportunities and dangers facing us in this on-going technological revolution.

Mr. Gawly:

Dr. Abdelbar first approached me through email: "Why don't you join the panel?" I was really excited, but then I noticed, I was sort of falling into a stereotype. I am referring to myself as being a CS graduate. Being a computer Science graduate, therefore I'm one of the new people forming the technology world that we're trying to discuss. So looking at that: being the technical one in this panel, I'm going to look at how the technology that is being built right now moves us towards the global village, or moves us toward becoming more of a global village. I refuse to believe that this is the global village that we have spoken about because we are hardly there yet and from the technical side we are not there. From the sociological side, I guess we could be falling into a few of the niches that the global village will create. People are becoming less personal. I have noticed it in myself; I communicate more by

email now than I communicate on the phone – maybe because I spend most of the time on the computer. But I am sure if you look at your computers in the past five to ten years, if you even had a computer in the past five or ten years, and look at how long you connect to the net, you will notice that it has increased to at least double – not because you necessarily use the computer to work, but use it to communicate. The more we use this medium to communicate, as Dr. Switzer said, "the medium becomes sort of a message."

And speaking of the September 11th attacks, I was wondering how quickly the message actually got out. When I first got home, my Dad was turning on the TV and switching through different channels, looking for something out there, looking for any piece of new information he could grab. I went to my room and I grabbed the computer and I went on the net. Soon I had friends calling me and saying, "Did you see this? Did you see that?" I was like, "Where are you seeing this?" So, there was a lot of news traveling around. People were throwing things out there faster than people could read them. No one person could take up the news being delivered.

The village has lots of messengers out there, getting the news and bringing it back in, maybe too many messengers, too much being thrown at us at the same time. I have trouble sorting through search engine results. I am sure we have all used a similar search engine on the net to search for something. And each of us will get millions of results. And each of us will get a little tag line that attracts him differently. It becomes an idea of sorting so much information that we don't know what we are looking for. It's a source of confusion. And then, yet another niche that is saying, "you've got to think out of the box"; I am thinking, "out of what box?" There are too many boxes being formed around me as I stand right here. There is a box that says, "Think this way. Think that way. Look toward moving in your career. Look toward moving in whatever." Too many things are forming around me, and again you don't know how to go through it. So where is this box forming? I am falling into being –again, stereotypically- put into "I am a techno-pro."

I am not techno-phobic. I have got to go out to technology, just because I graduated out of a scientific background. It is different. It is nothing like you have ever had before. I remember still the days when I got my first computer, and slowly I hooked up, learning how to use it, learning how to connect it to the rest of the world. And when I finally got out there, I discovered so many other people, and those so many other people were just on dial-up services. Now when we talk about building the information highway, are we really building a highway for every-body? Or is it again a highway for only the people who can take this information? Okay, maybe the United States has highways, but a lot of other countries are still going through information mud roads, for example. Are you really getting the information you should be getting? A dial-up service, for example, you can't stream video on it. But with an ISDN line you are starting, but who can afford that? How many people in the world can afford to get on, even through the little mud roads of the internet? So, the world is expanding, but we are only building one side of the village and the village is become segregated right from the start. It is becoming smaller but it is becoming segregated; people who are information rich and people who are information poor, again being divided. Who should go where?

Is it money really that makes the difference or is it your ability to interpret the information that is coming to you? I am sure many people out there who can afford to use the internet aren't using the information it provides, or are misusing the information it provides – misuse is popular. What popularized the internet is the same thing that popularized the video, the VCR, years ago. Its pornography. It gets out there. And even in this global village, you have to sort through the information; you've got to block out what you don't need, you've got to receive what you really want. So I think there is a problem, that people don't know how to sort through the information that is coming in to them. You go online to do a search, you find too much information. And I believe there is such a thing as having too much out there to sort through. With people who come from the economic side, with more information, there is also more disinformation happening out there – scams that go on the net, scam artists. With the whole village, we are not sorting out the bad things that we should have really learned to look at from our real lives. We should have blocked these from entering our new village, trying to create a utopia of information, for instance. But again, we are letting them all in. All the scam artists are getting in the global village. All the pornography is getting in the global village. All the disinformation is getting there. And if you think, "well if you don't let those people in, you are really blocking yourself out;" we have to get to the real world to see, have we blocked them out, or why are we always trying to block them out? Is it a criminal side that we don't like? Which side are we trying actually to let into our global village and which do we keep out? I think that's the question that we should really be asking. Thank you.

Ms. Mohammed:

First, I would like to apologize for the 2 minutes delay for the organizers and for the audience and fellow panelists. I would go the same way and talk about my personal experience of information technology at least for the last 4 years. I have been made able to move at multi-levels of the experience, and lived between my home country, Sudan and Egypt here at the AUC, and Canada, and these are three different levels of being affected by the information technology. Too many things come to my mind at the same time, but I think the panelists said enough about that. I want to concentrate more on the single view point which I wrote in the paper. The focus of my participation is going to be on the not so positive effect of the global village, of the internet, and information technology. The world of today is divided as we said into developing and developed countries. The overwhelming majority of the developing countries don't have access to information technology, do not have computers and even for those that do the technical environment is very constraining for use of computers and information technology, like power cuts and all that. This includes the population centers of learning, where the university faculty are scarce. This would be beneficial or otherwise. I will give an example. A clear example is the international response to famine in Africa from 1985 until now. In 1985, it was a BBC broadcast which triggered off massive famine relief operations in Sudan and Ethiopia. In 1990-91 the second sighting of famine hit the region again. Famine conditions are widespread in Sudan and Ethiopia, and now I am

talking from personal experience. Citizens, in fact a group of UK and Khartoum faculty, who were there in 1985 could not affect, even remotely, a similar experience to that of 1985, through their contacts with their offices... By that time information communication was new and limited. In 1998 a 3 day conference in which I was participating was held in Addis Ababa, Ethiopia, on famine, by more or less the same organization. The absence of multimedia and the role of the developing countries will be eclipsed and neutralized largely by stronger powers. So, there are other powers which can neutralize the positive small village effect on the lives of the village people.

And now we are in the globalization era and these roles are expected to change, developing on the international scenes. There is a different scene now. There is a very intensified campaign against energy which is related to an oil company, which has contracted with the government in Sudan for utilization of the oil resources in Sudan. This campaign is hosted mainly on the internet. This is known to the millions of Sudanese in Sudan.

I'd like to use an example of how differentials are being created in terms of different parts of the university. The developing world is affected not as producer and consumers of information technology, but rather in restrictions on the use, this is extensible to this stage. I think there has been a lot of discussion about developing countries being the news makers rather than being affected by the news. This is extendible to the use of the internet, which is limited to a few in the developing world and is a secondary information source, and as such if you use internet for your information collection, it is a secondary course. If this is used in place of a primary source, using the internet adds different quality to social skills.

A negative response, to round up, in developing world inhabitants could be rather than the uses of information technology, but not the matter of concern. An example of that would be the widespread use of play stations in Sudan. And the blame is on parents and schoolteachers, because schoolboys use their pocket money to run away from school to these play station shops around in El Khartoum. This is not to mention pornography which is widespread as *the* use of websites. To conclude, information technology and the Internet should add more to other referential. Thank you. ■

The Importance of Web-Based Education: The Case of Egypt *

Dr. Tarek Hatem & Mr. Sherif A. Sherif
Professor of Management, AUC, Candidate for MPA, AUC

Rapid technological advancement provides the means for fundamentally changing the way in which instruction is delivered to students. Web-based education forces individual interactions discipline between the teacher and each student. In Egypt, the use of information technologies in the learning process is still in a very early stage. While interactivity, improved effectiveness and higher efficiency are among the benefits of a web-based educational system, there are number of problems and challenges that have to be considered. This paper identifies the issues to consider in implementing a national strategy to use information technologies in the modernization of the educational system. It also addresses the barriers that faces web-based education. Finally, it provides recommendations to accelerate the process and maximize the return on investment in a web-based educational system. ■

* Abstract only is published here

Use of Technology in Classroom Instruction: Adoption of State of the Art Technology at The American University in Cairo

Dr. Sam Green, Department of Economics

State of the art technology for improving instruction and learning is now widely available to institutions of learning. One of the most popular online products is *WebCT* (Web Course Tools). The producers of *WebCT* [1] claim that it is the world standard for online instruction and use of the product: 1) reduces preparation time and improves course content for instructors and 2) improves course completion and grades for students. Based upon the large number of institutions that have purchased a site license, it is reasonable to assume that the claims are valid. *WebCT* is the most widely used product for online instruction in the world.

With the availability of this state of the art technology, educational institutions have an excellent opportunity to improve instruction for their students. The extent to which an institution is successful in improving instruction with technology, however, depends largely upon the degree to which the faculty adopts and utilizes the technology in their classrooms. Thus, obtaining a license to use a product like *WebCT* is only a first step towards improving instruction in the classroom. Faculty must utilize the program to acquire the potential benefits that it offers.

Beginning with the fall semester of the 2001-2002 academic year, The American University in Cairo (AUC) joined some 2300 other institutions in 79 countries by obtaining a site license for *WebCT*. Of the other 2300 institutions, 1470 were in the United States, 206 in Canada, 115 in the United Kingdom, and 45 in Africa and the Middle East, 2 of which were located in Egypt[2]. By the end of the second semester of the 2001 - 2002 academic year, the number of institutions using *WebCT* had increased to over 2600, with 53 in Africa and the Middle East, including AUC. These 53 institutions are listed in Table 1.

In its first licensed semester, five departments (or units) at AUC had at least one course that used *WebCT*: 1) anthropology, 2) chemistry, 3) political science, 4) the Social Research Center, and 5) the Writing Program. By the second semester, fourteen additional departments (or units) had at least one course that used the program, bringing the total to 19. These additional departments were: 1) the Arabic Language Institute, 2) biology, 3) computer science, 4) construction engineering, 5) economics, 6) the English Language Institute, 7) English, 8) engineering, 9) management, 10) mathematics, 11) mechanical engineering, 12) physics, 13) psychology, and 14) sociology. This one-semester increase in the number of departments with courses that utilize *WebCT* indicates that there may be an upward trend in usage of the product.

This paper is a detailed report on the adoption of technology to improve teaching at AUC. In particular, available data on the use of *WebCT* in the classroom at AUC will be examined with the purpose of addressing issues pertaining to current and future usage. Some of the issues to be addressed include: 1) Which

courses in AUC are currently using *WebCT* and does the course content determine the intensity

Table 1
WebCT in Africa and the Middle East

Institutions with Licenses

Country	**Institution(s)**
Bahrain	Arabian Gulf University University of Bahrain
Botswana	University of Botswana
Cyprus	University of Cyprus
Egypt	The American University in Cairo Cairo University - Faculty of Commerce
Iran	Charles Sturt University Iran University of Science & Technology Misbah Kauser Institute of Education University of Tehran
Israel	Islamic University of Gaza Technion -Israel Institute of Technology
Lebanon	The American University of Beirut College Notre Dame de Louaize Lebanon American University Universite Saint-Joseph
Nigeria	Webtech Technologies
Oman	Modern College
Saudi Arabia	Buraydah College of Technology King Fahd University of Petroleum and Minerals King Saud University University of West Indies
South Africa	Border Technikon Cape Technikon Durban Institute of Technology Northern Shropshire University Pretoria Technikon Rands Afrikaans University Rossair Contracts Ltd. Technikon Free State Technikon Mongosuthu

Table 1
WebCT Institutions in Africa and the Middle East (continued)

Country	Institution(s)
South Africa	US International University
	University of Cape Town
	University of Fort Hare
	University of Health Sciences Antiqua
	University of Natal
	University of Pretoria
	University of South Africa
	University of Witswatersand
	University of Zululand
	University of the North
	University of the Orange Free State
	Zimbabwe Open University
Turkey	Anadolu University
	Sabanci University
U. A. E.	Abu Dhabi Mens College
	The American University of Sharjah
	Emirates Academy of Hospitality Management
	Etisalat Academy
	Higher Colleges of Technology
	Online Education Ltd.
	United Arab Emirates University
Total 13	**Total 53**

of usage? 2) What is required of an instructor to adopt *WebCT* in the classroom? 3) How do students view technology-enabled learning? 4) Is *WebCT* effective in helping students to reach their learning objectives? The findings and conclusions of this study will be predicated on the examination of data supplied by academic computing services, and on knowledge gained from first-hand experience of utilizing the product in the classroom. The overall goal of the research effort is to provide useful insights into relevant issues regarding policy implications of the adoption of technology in the classroom at AUC. The policy considerations will address issues relating to the necessary planning for increased faculty utilization of *WebCT* and the future objectives of the university regarding the extent of technology-assisted teaching and learning at AUC.

The paper is organized into five sections. The first section presents information on what *WebCT* is and identifies the courses that used it in AUC's first year as a licensed user. In the next section, data is presented regarding the extent of usage

of the product within the courses that adopted it. The third section presents detailed information on putting a course online, the training required, and the training of students. In the fourth section, preliminary findings and conclusions are discussed. The fifth and final section discusses policy implications of continued usage of *WebCT* at AUC.

WebCT and Classroom Usage in the First Year

WebCT is a software program that allows instructors to put their courses online. The most attractive aspect of the program is its adaptability to all situationsæ it can merely supplement a course as a web page or it can be used exclusively as the entire online course and it accommodates all situations in-between. The product offers tools to assist with course instruction and student understanding. AUC academic computing services support staff is responsible for training instructors to work with *WebCT* in their classrooms. The support staff provided an excellent description of *WebCT* in an e-mail message that contained the training schedule for the spring session of 2002. The training schedule e-mail message is reproduced in Exhibit 1.

Exhibit 1
ACS E-mail Message on WebCT Training for Spring 2002

From: Maha Elkoshairi
To: Faculty
Sent: Monday, January 28, 2002
Subject: WebCT Training for Spring 2002

Dear faculty,

ACS is pleased to announce the training schedule for WebCT for Spring 2002, with a comprehensive set of tracks specially designed to introduce faculty to its usage, and the various tools and facilities it makes available. WebCT provides many features that support a full range of teaching and learning styles, allowing both faculty and students t make intelligent and efficient usage of resources and time. WebCT supports learning along a wide spectrum:

- Face-to-face courses enhanced by a web presence.
- Courses with both face-to-face and online components.
- Full online courses where all interaction takes place online.

How can faculty members make use of WebCT?

- WebCT enables Faculty members to post course contents online including text, images, videos, and audio materials.
- Creates opportunities for students to be knowledge builders and encourage student interaction by using links to websites and engaging them into group presentations.
- Evaluate students with quizzes and assignments.

- Communicate with students via discussions, e-mail, and interactive whiteboard.
- Facilitate learning using searchable indexes and glossaries.
- Supply student feedback via online grade book, self tests, and progress tracking.

Exhibit 1
ACS E-mail Message on WebCT Training for Spring 2002 (continued)

The following tracks will be given during February and repeated again in April; each track consists of 4 courses, with each course dealing with a set of tools that WebCT supports. Each course will be offered on two different dates, to accommodate as many schedules as we can.

All sessions will be held in Lab. 501, Hill House, Main Campus. WebCT training is developed & conducted by Ms. Marwa Mansour.

To attend these sessions please reply to (e-mail address) with the following:

1. Track number
2. Course numbers
3. Preferred username for your training WebCT account (if you don't have one!!)

Track 1: February 2002 WebCT Sessions

Course #	Topic	Date	Time
WebCT I-01	Introduction to WebCT (What is WebCT)	Mon 4/2/2002	11:00 - 12:00
or			
WebCT I-02	Introduction to WebCT (What is WebCT)	Wed 6/2/2002	11:00 - 12:00
WebCT II-01	Syllabus, Calendar & E-Mail	Mon 11/2/2002	11:00 - 12:00
or			
WebCT II-02	Syllabus, Calendar & E-Mail	Wed 13/2/2002	11:00 - 12:00
WebCT III-01	Discussion, Assignment & Content Module	Wed 20/2/2002	11:00 - 12:00
or			
WebCT III-02	Discussion, Assignment & Content Module	Wed 27/2/2002	11:00 - 12:00
WebCT IV-01	Quiz & Online Grade Activities	Mon 4/3/2002	11:00 - 12:00
or			
WebCT IV-02	Quiz & Online Grade Activities	Wed 6/3/2002	11:00 - 12:00

Track 2: April 2002 WebCT Sessions
(Schedule of Same Courses offered in track 1)
Thank you.
Maha Elkoshair
Information Manager
Academic Computing Services

In the fall semester of 2001, instructors with prior training taught courses using *WebCT*. Other instructors were trained in the first semester to use the program in the spring semester. Table 2 lists the courses that utilized the program in the fall semester.[3] Table 3 presents courses that used *WebCT* in the Spring 2002 semester (excluding two courses taught in the Social Research Center).

TABLE 2
WEBCT USAGE at AUC
FALL 2001

COURSE	INSTRUCTOR
ANTH20202	M. Peterson
ANTH38601	M. Peterson
ANTH40701	M. Peterson
SCI10902	A. Ellozy
POLS41201	C. Doebbler (sponsor)
POLS51001	C. Doebbler
POLS51101	C. Doebbler
POLS51201	C. Doebbler
POLS51301	C. Doebbler
POLS51401	C. Doebbler
POLS51501	C. Doebbler
POLS51601	C. Doebbler
POLS51701	C. Doebbler
POLS51801	C. Doebbler
Social Research Center 1	M. Whitaker
Social Research Center 2	M. Whitaker
ECLT101	L. Holdijk (sponsor of 82 sections in the Writing Program)
ECLT102	L. Holdijk
ECLT103	L. Holdijk
ECLT112	L. Holdijk
ECLT113	L. Holdijk

TABLE 3
WEBCT USAGE at AUC
SPRING 2002

COURSE	INSTRUCTOR
ALNG10201	S. Farag
ANTH20202	A. Fabos
ANTH20204	M. Peterson
ANTH39001	M. Peterson
ANTH50501	M. Peterson
BIOL10401	Z. Suher
BIOL10402	Z. Suher
BIOL21401	T. Quayle
BIOL41101	T. Quayle
BIOL41501	Z. Suher
CENG32301	M. Naguib
CHEM10405	S. Abdel Rahman
CHEM10502	D. Fleita
CHEM12003	S. Abdel Rahman
CHEM40601	D. Fleita
CSCI10605	A. Khalil
CSCI11003	H. Hosny
CSCI11004	H. Hosny
CSCI21002	M. Mudawwar
CSCI21003	M. Mudawwar
CSCI23001	I. Talkhan
CSCI25301	A. Khalil
CSCI31501	A. Khalil
CSCI34101	H. Hosny
CSCI43301	M. Naguib
CSCI43501	M. Naguib
CSCI43701	M. Naguib
CSCI44701	M. Mudawwar
CSCI45301	A. Khalil
CSCI49101	H. Hosny
CSCI49102	H. Hosny
CSCI58501	A. Sameh
ECLT10101	K. Schindler
ECLT10102	S. Barr
ECLT10103	A. Saunders

TABLE 3 WEBCT USAGE at AUC SPRING 2002 (continued)

COURSE	INSTRUCTOR
ECLT10104	L. El Badri
ECLT10105	K. Meyers
ECLT10106	M. Osman
ECLT10107	L. Turley
ECLT10108	K. Schindler
ECLT10109	S. Barr
ECLT10110	K. Meyers
ECLT10111	M. Osman
ECLT10112	Staff
ECLT10201	K. Schindler
ECLT10202	S. Barr
ECLT10203	K. Meyers
ECLT10204	J. Maklad
ECLT10205	M. Osman
ECLT10207	B. Jones
ECLT10208	G. McCullough
ECLT10209	L. Turley
ECLT10210	N. Shafik
ECLT10212	G. McCullough
ECLT10213	J. Sarraf
ECLT10214	N. El Kholy
ECLT10215	D. Blevins
ECLT10216	T. Storseth
ECLT10217	L. El Badri
ECLT10218	N. El Kholy
ECLT10219	T. Storseth
ECLT10220	R. Fiedler
ECLT10222	M. Mahoney
ECLT10223	S. Makhlouf
ECLT10224	L. Youssef
ECLT10226	M. George
ECLT10227	L. Youssef
ECLT10228	J. Sarraf
ECLT10301	N. El Kholy
ECLT10302	J. Maklad
ECLT10303	N. Shafik
ECLT10304	B. Jones
ECLT10307	N. Shafik
ECLT10308	R. Fiedler
ECLT10309	B. Jones
ECLT10310	J. Sarraf

TABLE 3 WEBCT USAGE at AUC SPRING 2002
(continued)

COURSE	INSTRUCTOR
ECLT10312	R. Fiedler
ECLT10313	T. Storseth
ECLT10314	G. McCullough
ECLT10317	M. Mahoney
ECLT10318	S. Makhlouf
ECLT10319	L. Youssef
ECLT10321	S. Makhlouf
ECLT10322	D. Blevins
ECLT10323	M. Mahoney
ECLT10324	K. McInturff
ECLT10325	M. George
ECLT10326	D. Blevins
ECLT10327	K. McInturff
ECLT11301	S. El Wakil
ECLT11302	S. Aydelott
ECLT11303	M. Amin
ECLT11305	V. Farag
ECLT11306	A. Badawy
ECLT11307	R. Hoath
ECLT11330	A. Badawy
ECLT11331	S. Aydelott
ECLT11334	V. Farag
ECLT11340	S. El Wakil
ECON20206	S. Green
ECON21504	A. Hadi
ECON30201	S. Green
ECON30202	S. Green
ELIN09803	S. Farag
ELIN12001	C. Sheikholeslam
ENGL10001	A. El-Shimi
ENGL10003	A. El-Shimi
ENGR22901	M. Naguib
ENGR57901	M. Naguib
ENGR59101	M. Naguib
FINC30301	H. El Sady
FINC40401	H. El Sady
FINC41501	H. El Sady

TABLE 3 WEBCT USAGE at AUC SPRING 2002
(continued)

COURSE	INSTRUCTOR
INTB40101	M. Hatem
INTB54401	S. Imam
MATH20001	M. Hebert
MATH20002	M. Hebert
MATH30201	M. Hebert
MATH30601	A. Hadi
MATH40401	A. Hadi
MENG42801	M. Farag
MKTG52401	S. Imam
OPMG50701	S. Imam
OPMG52801	S. Imam
ORGN30703	C. Erdener
PHYS21101	A. El-Fiqi
POLS47401	C. Doebbler
POLS51001	C. Doebbler
POLS51401	C. Doebbler
POLS57601	A. Fabos & B. Harrell-Bond
PSYC20108	M. Mansour
PSYC20801	E. Coker
PSYC30901	E. Coker
PSYC34201	M. Mansour
PSYC40301	E. Coker
PSYC40401	K. Myambo
SCI10501	G. De Young
SCI10902	W. Lutfi
SOC20105	A. Abdel Latif
SOC38101	A. Abdel Latif
SOC50201	N. Hopkins
SYST40602	S. El-Akabawy

The Extent of *WebCT* Usage within the Courses

With the use of data on the space requirements for internal files generated by usage of the program, the extent to which each course utilized *WebCT* can be determined. The minimum space requirement for internal files needed to create a course is roughly 274 kB of storage space. Courses that use amounts of space in the 300 to 400 kB range, have not generated many internal files, and suggests a very limited usage of the product. It is likely that these courses utilize the program primarily as a web page that contains one or two of the available tools. Courses with more tools and increased usage of these tools will have larger space requirements for the internal files. Hence, the space for internal files is directly related to usage and as such is an excellent indicator of *WebCT* usage.

For the spring semester, there was a wide range of usage for the courses using *WebCT*. The smallest space for internal files was 277 kB and the largest was roughly 35,000 kB. The internal space data for all courses at the end of the spring semester (June 4, 2002) is presented in a histogram in Figure 1. This figure shows the wide range of usage in the spring semester. As stated above, the product's ability to accommodate the intended usage of all instructors is its most attractive feature.

An even clearer picture of *WebCT* usage can be obtained by grouping the courses according to space requirements. An arbitrary designation of usage as extensive (space of 16,000 to 35,000 kB), moderate to high (space of 1,500 to 6200 kB), low to moderate (space of 500 to 1,499), and limited (space of 274 to 499 kB) was made to disaggregate the data. Histograms for these groupings are presented in Figures 2 - 5. Examination of these histograms shows that even within a grouping there is a wide range in the intensity of usage.

Figure 1
WebCT Usage at AUC (June 4, 2002)
Frequency Histogram for All Sections

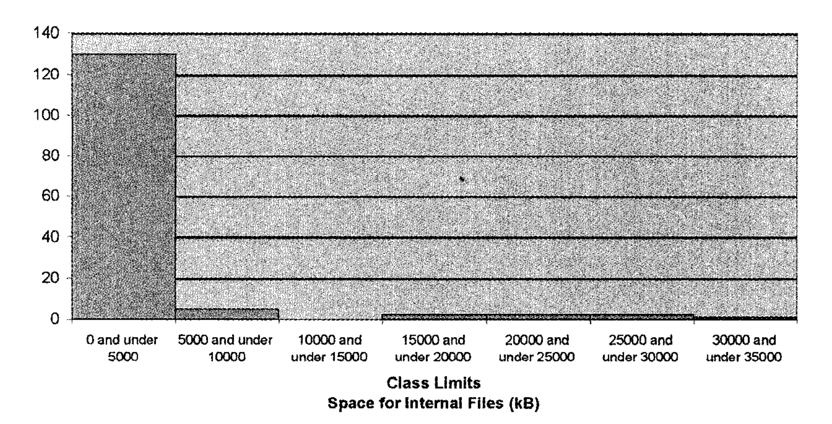


Figure 2
Extensive WebCT Usage (June 4, 2002)
Frequency Histogram

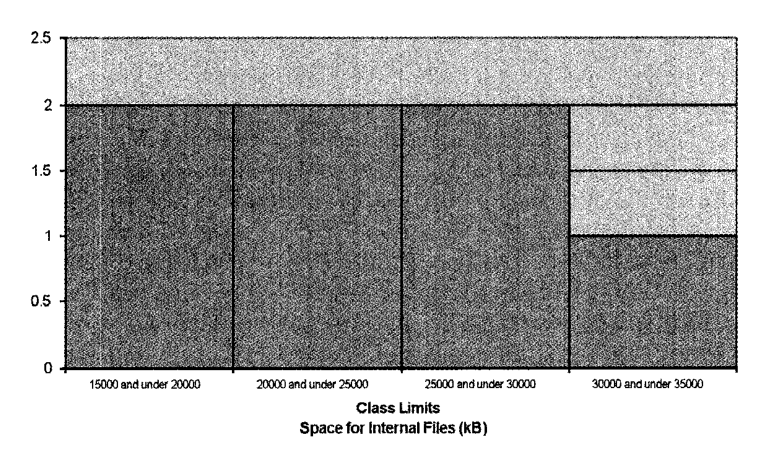


Figure 3
Moderate to High WebCT Usage (June 4, 2002)
Frequency Histogram

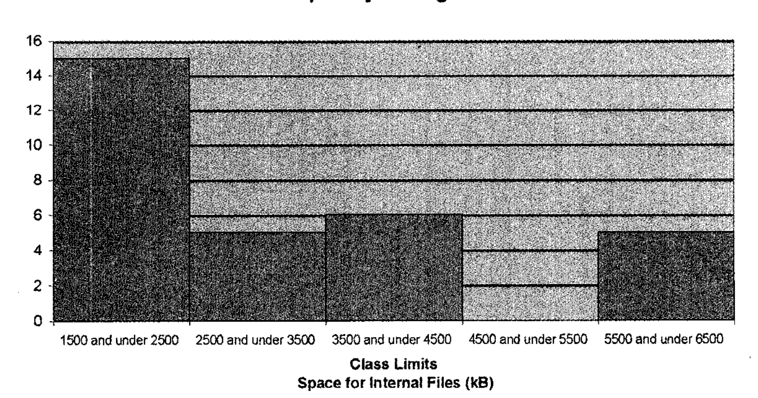


Figure 4
Low to Moderate WebCT Usage (June 4, 2002)
Frequency Histogram

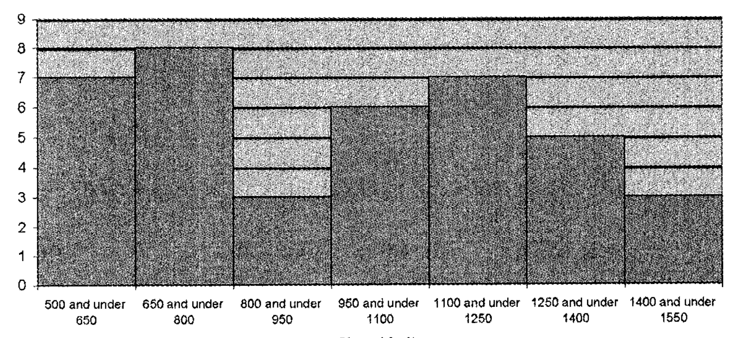
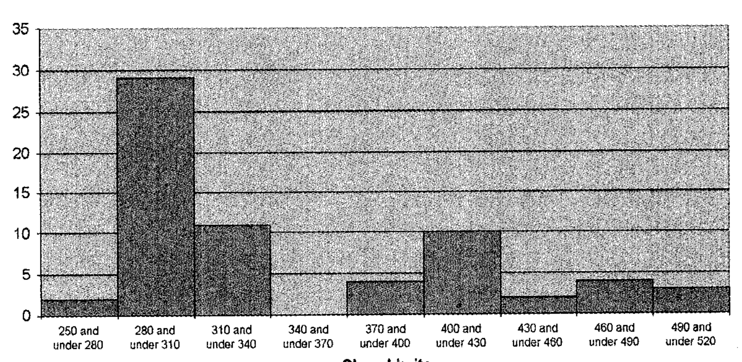


Figure 5
Limited WebCT Usage (June 4, 2002)
Frequency Histogram



For a more detailed view of how *WebCT* is used across courses, the actual courses associated with the groupings are presented in Tables 4 - 7. The most notable finding obtainable from these tables is that within each of the four groupings there is a cross sectional representation of different departments. This means that the extent and intensity of usage of *WebCT* depends more on the desires of the instructor than on the nature of the course. Consequently, this indicates that the product is extremely adaptable to the needs and desires of instructors in all departments, irrespective of course content.

TABLE 4
EXTENSIVE WEBCT USAGE at AUC (June 4, 2002

SPACE: 16,000 to 35,000 kB

COURSE	**INSTRUCTOR**	**USERS**	**SPACE FOR INTERNAL FILES (kB)**
CSCI25301	A. Khalil	37	34,850
ECON20206	S. Green	43	29,066
ECON30202	S. Green	23	28,443
ECON30201	S. Green	30	24,771
MKTG52401	S. Imam	44	21,308
ECLT10226	M. George	15	17,935
ECLT10325	M. George	16	16,457

TABLE 5
MODERATE TO HIGH WEBCT USAGE at AUC (June 4, 2002)

SPACE: 1,500 to 6,200 kB

COURSE	**INSTRUCTOR**	**USERS**	**SPACE FOR INTERNAL FILES (kB)**
ECLT10202	S. Barr	14	6,114
OPMG52801	S. Imam	26	6,053
ECLT10105	K. Meyers	15	6,034
ECLT10109	S. Barr	16	5,687
ECLT11340	S. El Wakil	16	5,552
ANTH20204	M. Peterson	35	4,399
SYST40602	S. El-Akabawy	17	4,152
ECLT10318	S. Makhlouf	13	3,947
ECLT10304	B. Jones	15	3,588
ECLT10302	J. Maklad	15	3,566
ECLT10207	B. Jones	15	3,556
PSYC20801	E. Coker	41	3,370
ECLT10319	L. Youssef	14	2,929
ECLT10204	J. Maklad	15	2,897
ECLT10321	S. Makhlouf	15	2,634
PSYC40301	E. Coker	11	2,594

ECLT10317	M. Mahoney	14	2,275
ECLT10213	J. Sarraf	16	2,270
ANTH39001	M. Peterson	17	2,141
SCI10902	W. Lutfi	44	2,023
ECLT10102	S. Barr	14	1,967
ECLT10326	D. Blevins	10	1,966
INTB54401	S. Imam	29	1,898
OPMG50701	S. Imam	24	1,891
MATH40401	A. Hadi	5	1,879
ECLT10108	K. Schindler	15	1,837
ECLT11301	S. El Wakil	16	1,745
ECLT10301	N. El Kholy	15	1,687
ECLT10218	N. El Kholy	15	1,535
ECLT10223	S. Makhlouf	15	1,528
ECLT10110	K. Meyers	15	1,524

TABLE 6

LOW TO MODERATE WEBCT USAGE at AUC (June 4, 2002)

SPACE: 500 to 1,499 kB

COURSE	INSTRUCTOR	USERS	SPACE FOR INTERNAL FILES (kB)
ECLT10309	B. Jones	15	1,498
ECLT10308	R. Fiedler	15	1,440
ECLT10310	J. Sarraf	13	1,411
ECLT10107	L. Turley	16	1,359
ECLT10106	M. Osman	15	1,358
ECLT10322	D. Blevins	15	1,327
ECLT10209	L. Turley	15	1,316
ECLT10227	L. Youssef	15	1,271
MATH20001	M. Hebert	41	1,202
ECLT10313	T. Storseth	11	1,196
MATH20002	M. Hebert	44	1,190
ECLT10224	L. Youssef	15	1,160
ECLT10201	K. Schindler	15	1,144
MATH30601	A. Hadi	42	1,139
ECLT10323	M. Mahoney	13	1,108
ECLT10215	D. Blevins	14	1,048
ANTH20202	A. Fabos	27	1,046
ECLT10228	J. Sarraf	14	1,017
ECLT10205	M. Osman	14	1,008
ECLT10222	M. Mahoney	14	957
ECLT11303	M. Amin	15	953
ECLT10219	T. Storseth	15	870
PSYC30901	E. Coker	37	862
ANTH50501	M. Peterson	12	801

ECLT10214	N. El Kholy	15	799
CSCI43301	M. Naguib	37	787
ECON21504	A. Hadi	38	758
ECLT10111	M. Osman	15	751
ECLT10112	Staff	6	728
CSCI43701	M. Naguib	23	708
ECLT10203	K. Meyers	15	706
ECLT10101	K. Schindler	15	669
ECLT10312	R. Fiedler	9	637
ECLT10220	R. Fiedler	12	626
ECLT10104	L. El Badri	15	562
CSCI43501	M. Naguib	25	557
ECLT10216	T. Storseth	16	537
MATH30201	M. Hebert	11	531
CENG32301	M. Naguib	29	526

TABLE 7
LIMITED WEBCT USAGE at AUC (June 4, 2002)
SPACE: 274 to 499 kB

COURSE	INSTRUCTOR	USERS	SPACE FOR INTERNAL FILES (kB)
ECLT10217	L. El Badri	14	499
ECLT11302	S. Aydelott	16	496
ECLT10324	K. McInturff	15	490
POLS57601	A. Fabos & B. Harrell-Bond	13	478
ECLT10307	N. Shafik	15	472
ECLT10327	K. McInturff	15	467
ENGR22901	M. Naguib	31	467
ECLT10210	N. Shafik	14	433
ECLT11330	A. Badawy	15	430
PSYC20108	M. Mansour	44	424
SCI10501	G. De Young	13	417
PSYC34201	M. Mansour	37	414
ECLT10212	G. McCullough	15	412
ECLT10208	G. McCullough	12	410
ECLT10103	A. Saunders	15	407
ECLT11331	S. Aydelott	12	406
ECLT11334	V. Farag	15	405
ECLT10303	N. Shafik	15	400
ECLT10314	G. McCullough	8	400
ECLT11306	A. Badawy	15	398
PSYC40401	K. Myambo	26	396
ECLT11305	V. Farag	16	393
ECLT11307	R. Hoath	16	392

CHEM10502	D. Fleita	41	339
PHYS21101	A. El-Fiqi	16	336
BIOL10401	Z. Suher	38	326
MENG42801	M. Farag	55	322
ORGN30703	C. Erdener	36	321
BIOL10402	Z. Suher	39	320
CSCI45301	A. Khalil	28	317
CSCI44701	M. Mudawwar	30	315
CSCI21002	M. Mudawwar	18	314
ENGL10003	A. El-Shimi	11	313
CSCI31501	A. Khalil	23	311
CSCI21003	M. Mudawwar	18	309
ALNG10201	S. Farag	6	303
CHEM12003	S. Abdel Rahman	27	303
ELIN12001	C. Sheikholeslam	7	302
SOC20105	A. Abdel Latif	41	302
INTB40101	M. Hatem	42	301
BIOL41501	Z. Suher	10	300
CHEM10405	S. Abdel Rahman	41	300
CSCI10605	A. Khalil	26	300
ENGL10001	A. El-Shimi	11	300

TABLE 5 LIMITED WEBCT USAGE at AUC (continued)

COURSE	INSTRUCTOR	USERS	SPACE FOR INTERNAL FILES (kB)
CSCI11004	H. Hosny	17	298
POLS47401	C. Doebbler	11	298
POLS51001	C. Doebbler	14	298
CSCI11003	H. Hosny	22	297
CSCI49101	H. Hosny	27	297
FINC30301	H. El Sady	40	297
FINC40401	H. El Sady	40	297
CSCI23001	I. Talkhan	16	296
CSCI34101	H. Hosny	17	296
CSCI49102	H. Hosny	21	296
CSCI58501	A. Sameh	11	296
BIOL21401	T. Quayle	18	295
FINC41501	H. El Sady	26	294
POLS51401	C. Doebbler	13	294
BIOL41101	T. Quayle	11	293
ELIN09803	S. Farag	14	293
SOC38101	A. Abdel Latif	11	293
CHEM40601	D. Fleita	8	292

SOC50201	N. Hopkins	5	292
ENGR59101	M. Naguib	10	278
ENGR57901	M. Naguib	8	277

Putting Courses Online, Learning to Use *WebCT* and Training Students

To obtain first-hand knowledge needed to address some of the issues involved with this paper, *WebCT* was adopted in the 3 economics courses in the spring semester and 2 courses in the summer session of 2002 that were taught by this observer. All initial training for *WebCT* was self taught during the "winter session" between the fall and spring semesters. The support staff at academic computing services provided handouts and initial start-up information. Additional training took place as part of the learning-by-doing that occurs with instruction of courses using the product.

The most important determining factor in selecting the tools to be added to the course was the desire to improve the analytical skills of students. As is usually the case with instructors, the analytical reasoning skills of students improve significantly when they must present their ideas to others and answer the questions posed. As many instructors have come to realize, teaching and answering questions about a subject provides the best basis for a thorough understanding of the material. The presentation and interaction with others provides a broader perspective from which valuable insights about the material can be gained. This process is made easier when students can readily identify weaknesses in their understanding. Thus, the use of *WebCT* was predicated on the goal of utilizing technology to 1) increase interaction of students in a manner that fosters and develops analytical reasoning and 2) improves each student's ability to assess weaknesses in understanding. Based on these objectives, the *WebCT* tools selected to be added to the courses were 1) syllabus, 2) assignments, 3) mail, 4) chat, 5) discussions, 6) student presentations, and 7) quizzes.

After the selection of the tools to be used in the course, the procedures for use of the tools had to be learned. The training required for use of all the tools, except the quiz tool, was basic and easily self taught. The handouts from academic computing services were useful and provided excellent information. Learning to use the quiz tool, however, required considerably more concentration and focus. The main problem encountered was the programming needed to create the correct format of the quiz questions to be read into *WebCT*. There is an alternative approach to programming the questions, but it involves a protracted process of typing each question and parameter information into *WebCT*. This latter approach can be very drawn out and could take a considerable amount of time. When the instructor's access to *WebCT* is by fax modem, and there is only one phone line, this drawn out approach is to be avoided.

Utilization of the former approach, however, requires training in the use of the programming language for entering different types of questions. Moreover, even after learning the language, it is necessary to experiment with different settings to find the optimal setting. Thus, there is also the need for trial and error training when first learning how to write programs that create quiz questions. To illustrate

the level of detail one must learn to write a program that will be read into *WebCT* to create a quiz question, Exhibits 2 - 4 present, respectively, examples of programs used to create three types of questions: 1) matching, 2) short answer, and 3) multiple choice. Each exhibit also shows a simulated representation of the online appearance of the resulting question.

After learning to use the tools and adding them to the courses, files for the tools must be created and added. Because of the intensity with which *WebCT* was to be used in the courses, the creation and addition of files took a considerable amount of time. Files were created for the syllabus, assignments, and the quiz tools. The quiz files required the most time both because of the programming and trial and error training discussed above and the fact that the quizzes themselves had to be written. Indeed, most of the preparation time to use *WebCT* was spent preparing the online quizzes.

With the training complete and the tools and accompanying files added to the courses, the final step to begin using the program was student training. In the spring semester, one training session that took place in a computer lab was held at the start of the semester and additional information was provided throughout the semester. Through experimentation while uploading assignments, students discovered some of the reasons that occasion uploaded files could not be read online. At the start of the summer session, it was determined that two training sessions at the beginning of the course would be better than one session. Instructions for using the program were compiled into two parts to be used in the two sessions. All information learned from the previous semester was included in the handouts and presented in the two training sessions. The handouts for parts 1 and 2 of the training sessions are presented in Exhibits 5 and 6, respectively.

Exhibits 7 - 14 present representations of the online appearances of the pages that are viewed by students after they have learned to use *WebCT*. These exhibits present, respectively, representations of 1) the course homepage, 2) the assignments

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EXHIBIT 2
PROGRAM FOR A MATCHING QUIZ QUESTION IN WEBCT

:TYPE:M:short:short:E:0
:TITLE:Q1. Calculating Opportunity Cost(16)
:QUESTION:{T}
Consider the following combinations of bread and clothing production associated with a production possibility boundary (PPB). The combinations, with the amounts of bread and clothing in parentheses, (bread,clothing), are: A:(25,0); B:(20,5); C:(15,9); D:(10,12); E:(5,14); and F:(0,15). Match the correct answer to the question. Each question involves finding the opportunity cost (OC) or opportunity cost per unit (OCPU) of moving from one combination to another.
:L1
A to B (OC)

:R1
5 bread
:L2
E to F (OC)
:R2
5 bread
:L3
F to E (OC)
:R3
1 clothing
:L4
B to A (OC)
:R4
5 clothing
:L5
A to C (OC)
:R5
10 bread
:L6
C to A (OC)
:R6
9 clothing
:L7
F to B (OC)
:R7
10 clothing
:L8
A to B (OCPU)
:R8
1 bread
:CAT:Chapter1

EXHIBIT 2 (continued)
ONLINE APPEARANCE OF THE MATCHING QUIZ QUESTION

Question 1 (16 points)

Consider the following combinations of bread and clothing production associated with a production possibility boundary (PPB). The combinations, with the amounts of bread and clothing in parentheses, (bread,clothing), are: A:(25,0); B:(20,5); C:(15,9); D:(10,12); E:(5,14); and F:(0,15). Match the correct answer to the question. Each question involves finding the opportunity cost (OC) or opportunity cost per unit (OCPU) of moving from one combination to another.

A to B (OC) Æ | Choose match ▼
E to F (OC) Æ | Choose match ▼
F to E (OC) Æ | Choose match ▼
B to A (OC) Æ | Choose match ▼
A to C (OC) Æ | Choose match ▼
C to A (OC) Æ | Choose match ▼
F to B (OC) Æ | Choose match ▼
A to B (OCPU)Æ | Choose match ▼

Save answer

EXHIBIT 3
PROGRAM FOR A SHORT ANSWER QUIZ QUESTION IN WEBCT

:TYPE:S
:TITLE:Q2. Bread and Clothing Production(3)
:QUESTION:{T}
[+++ANSWERING FORMAT FOR THIS QUESTION: ABBREVIATED ANSWERS: Use the abbreviations of possible answers as the answers to be typed in the answer boxes. The abbreviations are in parentheses to the right of the answers. Type only the letters within the parentheses; do not type the parentheses.+++] This problem continues with information from the preceding problem: (bread,clothing): A:(25,0); B:(20,5); C:(15,9); D:(10,12); E:(5,14); and F:(0,15). As more and more bread is produced, the opportunity cost of producing bread __________ [Box1 (increases (inc), decreases (dec), remains constant (con))]. As more and more clothing is produced, the opportunity cost of producing clothing ________[Box2 (increases (inc), decreases (dec), remains constant (con))]. What is the shape of this PPB [Box3 (convex (vex), concave (cave), linear (line), can't tell (cant))]?

:ANSWERS:3
:ANSWER1:inc:33.33:1:40:0
:ANSWER2:inc:33.33:2:40:0
:ANSWER3:cave:33.33:3:40:0
:CAT: Chapter1

ONLINE APPEARANCE OF THE SHORT ANSWER QUIZ QUESTION

Question 2 (3 points)

[+++ANSWERING FORMAT FOR THIS QUESTION: ABBREVIATED ANSWERS: Use the abbreviations of possible answers as the answers to be typed in the answer boxes. The abbreviations are in parentheses to the right of the answers. Type only the letters within the parentheses; do not type the parentheses.+++] This problem continues with information from the preceding problem: (bread,clothing): A:(25,0); B:(20,5); C:(15,9); D:(10,12); E:(5,14); and F:(0,15). As more and more bread is produced, the opportunity cost of producing bread __________ [Box1 {increases (inc), decreases (dec), remains constant (con)}]. As more and more clothing is produced, the opportunity cost of producing clothing________[Box2 {increases (inc), decreases (dec), remains constant (con)}]. What is the shape of this PPB [Box3 {convex (vex), concave (cave), linear (line), can't tell (cant)}]?

Answer:

1. [ ]

2. [ ]

3. [ ]

[Save answer]

EXHIBIT 4
PROGRAM FOR A MULTIPLE-CHOICE QUIZ QUESTION IN WEBCT

:TYPE:MC:N:0:A
:TITLE:Q3. Defining Scarcity
:QUESTION:{T}
[+++For this multiple-choice problem, and for all the multiple-choice problems in this quiz, first complete the sentence with one of the first four multiple choices. Then select all choices beyond the first four that are correct. All multiple choices beyond the first four are related to the analysis or explanation of the question. Select as many of the additional multiple choices as are correct. You must choose

all of the correct choices associated with the problem for the problem to be graded as correct.+++]
Economic scarcity is problem that_____[choices 1-4]. Analysis / explanation[choices 5 and above]
:ANSWER1:25
exists because there are limited resources in the face of unlimited human wants.
:ANSWER2:0
would not exist if all economies in the world were achieving economic growth.
:ANSWER3:0
does not exist in wealthy, industrialized countries.
:ANSWER4:0
occurs only when a country is not producing on its production possibility boundary (PPB).
:ANSWER5:0
Scarcity exists for poor countries only.
:ANSWER6:25
Points above the PPB illustrate the concept of scarcity.
:ANSWER7:0
Points above the market demand curve illustrate the concept of scarcity.
:ANSWER8:25
Because of scarcity, choices must be made regarding the use of scarce resources.
:ANSWER9:0
The negative slope of the PPB illustrates the concept of scarcity.
:ANSWER10:25
All countries must deal with the problem of scarcity.
:ANSWER11:0
Points along the PPB illustrate the concept of scarcity.
:CAT:Chapter1

EXHIBIT 4 (continued)
ONLINE APPEARANCE OF THE MULTIPLE-CHOICE QUIZ QUESTION

Question 3 (3 points)

[+++For this multiple-choice problem, and for all the multiple-choice problems in this quiz, first complete the sentence with one of the first four multiple choices. Then select all choices beyond the first four that are correct. All multiple choices beyond the first four are related to the analysis or explanation of the question. Select as many of the additional multiple choices as are correct. You must choose all of the correct choices associated with the problem for the problem to be graded as correct.+++]

Economic scarcity is problem that_____[choices 1-4]. Analysis/ explanation[choices 5 and above]

1. exists because there are limited resources in the face of unlimited human wants.

2. would not exist if all economies in the world were achieving economic growth.
3. does not exist in wealthy, industrialized countries.
4. occurs only when a country is not producing on its production possibility boundary (PPB).
5. Scarcity exists for poor countries only.
6. Points above the PPB illustrate the concept of scarcity.
7. Points above the market demand curve illustrate the concept of scarcity.
8. Because of scarcity, choices must be made regarding the use of scarce resources.
9. The negative slope of the PPB illustrates the concept of scarcity.
10. All countries must deal with the problem of scarcity.
11. Points along the PPB illustrate the concept of scarcity.

Save answer

EXHIBIT 5
Introduction to Economics II - ECON202 Dr. Green
Summer 2002

Instructions for Using WebCT: Part 1
Getting Started

1. Open your browser, it is either Internet Explorer or Netscape Communicator.
2. Type **http://webct.aucegypt.edu:8900/** in the address box. The *WebCT Homepage* appears, with a log on link.
3. Click ***Log on to***. The user window appears with two boxes for user name and password.
4. Your student identification number is your user name. When you log on the first time, your student number is also your password. Type your student identification number in both boxes. The *myWebCT* page appears and shows all of your courses that use WebCT.
5. Click **Change Password** and change your password to something you can remember.
6. Click **Update Password**.
7. Under *Courses*, click ***Introduction to Economics II - ECON202.*** The homepage for the course appears with several links.

Accessing the Syllabus Online

1. From the course homepage, click ***Syllabus.*** The course syllabus appears.
2. Click **Home** under the course name to return to the course homepage.

Reading, Downloading, and Printing the First Assignment

1. Click ***Assignments***. The *Assignments* screen appears with a listing of assignments under *Title*.
2. Click ***Online Preparation Assignment.*** The assignment screen appears with the assignment instructions. The screen also contains a box labelled *Assign-*

ment-related Files.

3. Click the file name of the attached file inside the box. A screen appears that is split into two sections. The smaller section on the left contains the file name of the attached file and permits you to download it. The other section is blank.
4. Click the file name of the attached file again. The contents of the file appear in the other section of the window. You can then read the assignment online.
5. Click the space next to the file name in the first section of the box, and then click **Download.** A download screen appears. Download and save the file on the desktop. This will take only a few seconds. Close the download screen and the screen that contains the file. Return to the course homepage.
6. Click the **Minimize** box at the top right of the computer screen. This is the first of the three small boxes at the top right of the screen.
7. Open Microsoft (MS) Word. Open the file that you downloaded. Type your name and I.D. number at the top of the file. Save, print, and close the file and exit MS Word. Click on the course name in WebCt on the bottom of the computer screen. The course homepage appears.

EXHIBIT 5 Instructions for Using WebCT: Part 1 Dr. Green (continued)

Reading and Composing Mail Messages

1. From the course homepage, click ***Mail***. The *Mail* screen appears. On this screen, messages that have been sent to you will be located in *Inbox* and the messages that you send are located in *Outbox*. To read messages, click **Inbox**. Click **Mail** under the course name to return to the *Mail* screen.
2. From the *Mail* screen, click **Compose Mail Message**. The mail composition screen appears.
3. Click **Browse** at the top of the screen. A screen appears that allows you to select recipients; it is a listing of the people in the class.
4. Click the name(s) of the person or people you want to send a message to. To select people in different parts of the listings, hold the control key located at the bottom left corner of the keyboard while clicking each person's name.
5. After you have finished selecting the intended recipients of your message, click **Done**. The mail composition screen reappears.
6. Give your message a subject name and type the message in the message box. After you have completed your message, click **Send**. Click **Home** under the course name to return to the course homepage.

Using the Chat Rooms

1. From the course homepage, click **Chat Rooms**. The Chat screen appears with links to four chat rooms where all messages are recorded and two other rooms where messages are not recorded.
2. Click one of the chat rooms. A chat room session screen appears that shows who is logged on to the chat room and the messages that are being sent.
3. Type your message in the message box at the bottom of the screen and press

the **Enter** key on your keyboard. Your message will appear on the session screen.

4. Click **Quit** when you are finished.

Reading and Composing Discussion Group Postings

1. From the course homepage, click ***Discussion Groups***. The *Discussion* screen appears.
2. All messages that have been posted in your discussion group can be accessed on this screen. Under *Topics*, click **All**. A listing of all posting by subject name appears.
3. Click a message. The message screen appears. You can read and reply to the message in this screen.
4. Click **Discussion Groups** under the course name to return to the *Discussion* screen.
5. From the *Discussion* screen, click **Compose Discussion Message**. The *Discussion composition* screen appears.
6. The topic *Main* will probably be highlighted in the *Topic* box. Select your group's name to replace *Main* in the *Topic* box. <u>Do not</u> send messages to *Main*.
7. Give your message a subject name and type the message in the message box. After you have completed your message, click **Send**. Click **Home** under the course name to the course homepage.

EXHIBIT 5 Instructions for Using WebCT: Part 1 Dr. Green (continued)

Using the Presentations Tool

1. From the homepage, click **Presentations**. The *Presentations* screen appears with a listing of the discussion groups and topics.
2. Click on one of the discussion group names. The members of the group will appear in the right side of the screen.
3. Click **Home** under the course name to return to the course homepage.

Accessing and Taking the Online Tests

1. From the homepage, click **Online Tests**. The Online Tests screen appears with a listing of the online quizzes.
2. Click the quiz you want to take. The quiz screen appears with general instructions and information about the quiz.
3. When you are really to take the quiz, click **Begin quiz**. The quiz appears and the time clock for the quiz begins.
4. Specific instructions for the quiz are the first thing you will see under question 1 of the quiz. These instructions are provided within brackets as follows: [+++Instructions for the quiz...+++]. The actual question 1 of the quiz begins immediately after the brackets.
5. Click the **Maximize** box of the quiz screen to better access the questions. This is the middle box of the three small boxes at the top right of the screen.
6. After you make selections and/or enter answers for each question, click **Save answer** and continue to the next question. When you save an answer,

the red ball under the question number in the box to the right of the questions will change to a green star.

7. After you are finished taking the quiz, click **Finish**. If you have not saved an answer for all questions, a screen appears indicating this and asks if you want proceed. Click **OK** to finish the quiz or click **Cancel** to answer the remaining questions. When you have finished the quiz, another screen appears and asks if you want to submit the quiz for grading.
8. Click **OK** to submit the quiz for grading. A screen appears that informs you that your quiz has been submitted. From this screen, you can select *View Results* to see your graded quiz results.
9. Click **View Results**. The results screen appears with your scores for each question and your overall quiz score.
10. Return to the course homepage as usual.

EXHIBIT 6
Introduction to Economics II - ECON202 Dr. Green
Summer 2002
Instructions for Using WebCT: Part 2

Preparing Computer Files to be Submitted Online

A. Saving all Files as HTML Documents

Create your files in MS Word. Save all computer files that are to be submitted online as HTML files. If MS Word 97 is installed on your computer, under *File,* select **Save as HTML...** The *Save As* screen appears, and has *HTML Document* selected in the *Save as type* option box. If, instead, you have MS Word 2000, under *File;* select **Save as ...** Choose the **web page** option in the *Save as type* section of the *Save As* screen that appears.

B. Naming the Files

Since the only file names that WebCT recognizes are: 1) single-word file names, including names containing many words with an underscore inserted between them and 2) file names that contain only letters and numbers, use the format given in the first assignment, the online preparation assignment that you printed.

C. Closing your Files

After you have saved your file as an HTML file with the proper name, it is important that you close the file and exit MS Word, <u>before</u> uploading it to WebCT. If you don't close your file, it cannot be read online.

D. Copying your Files

Always make a back-up copy of any file that you plan to submit online. Adopting this practice will help to reduce frustration that may be caused by computer malfunctions.

Attaching Files to Mail Messages

7. From the course homepage, click ***Mail.*** The *Mail* screen appears.
8. From the *Mail* screen, click **Compose Mail Message**. The mail composition

screen appears.

9. After you have composed your mail message, click **Browse** under *Attachments.* The file manager for your computer appears.
10. Find the HTML file that you want to attach and double click it. The mail composition screen reappears with the file that you have selected listed under *Attachments.*
11. Click **Attach File**.
12. Click **Send**. Return to the course homepage as usual.

Note that you may attach several files to a single message by repeating steps 3 through 5 above for each file.

EXHIBIT 6 Instructions for Using WebCT: Part 2 Dr. Green (continued)
Submitting an Assignment File Online and Verifying that it can be Read Online

1. From the homepage, click ***Assignments.*** The *Assignments* screen appears with the listing of the titles of assignments.
2. Click the name of the assignment of the assignment that is to be submitted. Another assignment screen appears.
3. Click **Student files**. A screen appears that allows you to upload the assignment you want to submit.
4. Click **Upload**. A screen appears that allows you to browse files to locate the file you want to upload.
5. Click **Browse**. The file manager for you computer appears.
6. After finding your file, double click it. On the screen that appears, the filename of the file you want to submit will be in a box.
7. Click **Upload.** If you have not violated the naming protocol, the filename of the uploaded file will appear within a box on the next screen. The box is located and the bottom of the screen and is entitled *Student files.* However, if the filename contains spaces or characters other than letters and numbers, you will receive a red error message indicating that the file was not uploaded. When you receive the error message, go back to MS Word, properly rename the file, save and close the file, exit MS Word and continue to the next step.
8. Given that the file was uploaded, check the filename in the box. If the file name has *.htm* at the end, you <u>have</u> successfully saved the file as an HTML file, so proceed to the next step. If the file name has *.doc* at the end, you <u>have not</u> saved it as an HTML file so you must delete and correct the file. To delete the file, click the space to the left of the filename in the box. Then click **Delete,** it is to the right of *Upload* in the middle of the screen. Now go back to MS Word and save the file as an HTML file, close it, exit MS Word and upload it again.
9. Given that you have uploaded an HTML file, click on the filename in the box entitled *Uploaded Files.* Another screen will appear that is separated into two

sections. The left section is one smaller than the right and contains the filename and a download option.

10. Click on the filename again. If you can read the file in the section to the right, you have successfully closed the HTML file before uploading it. From this point you can close the screen and proceed to next step. If you can't read the file online, and the file is an HTML file, you did not close the file before uploading it to WebCT and you must remove the file and correct it. To remove and correct the file, close the current screen and proceed with step 8 above.
11. Given that you can read the file online, click the **Return to Assignment** link at the top of the screen. The assignment title is the link.
12. Click **Submit assignment**. Another screen appears with the filename in a box.
13. Click **Submit assignment** again. You will receive a confirmation message that your assignment has been submitted.
14. Click **OK**. On the next screen, a *Submitted* message will appear in the *Status* column of the screen. After the assignment is graded, the message in the *Status* column changes to *Graded*. You may click **Graded** to see your grade.

<u>Do not submit a file that cannot be read online</u>. No credit will be given for any files that cannot be read online.

EXHIBIT 6 Instructions for Using WebCT: Part 2 Dr. Green (continued)
Attaching Files to Discussion Postings

The procedure for attaching files to discussion postings is the same as the procedure discussed on page one for mail attachments. Begin on the discussion composition screen and follow the above steps. When you have attached the file, click **Post**. Return to the course homepage as usual.

Creating a Presentation

After your discussion group has finished a group assignment, your group's work can be made available to others in the class by placing it in a presentation. To create a presentation, one person in the group must:

1. Create a file that contains your group's presentation. The first words within the file that you create will be the presentation name; so the first words typed within the file should be the name of your group.
2. Choose a name for your file observing the WebCT rules. You will later change the name to facilitate the presentation.
3. Save the file as an HTML file, close it, and exit MS Word.
4. From the course homepage, click ***Presentations***. The *Presentations* screen appears.
5. Click **[<u>Edit Files</u>]** under your group's name. A screen will appear that allows you to add files to and delete files from your group's presentation.
6. Under *File Options* at the top left of the screen, *Upload File* will be selected. Click **Go** in the gray box under *File Options*. Another screen appears that

allows you to find your presentation file that you created.

7. Click **Browse**, and follow the usual steps to upload your file. When uploaded, your file will appear under your group's presentation files.
8. Click the space to the left of the uploaded file.
9. Select **Rename** as the file action to replace *Edit* at the top center of the screen.
10. Click **Go** in the gray box next to *Rename*. A screen appears that allows you to enter the new name of the file.
11. Type **index.html** as the new name for the file.
12. Return to the course homepage and then to *Presentations*.
13. From the *Presentations* screen, click the presentation under *Project* and your group's presentation will appear (provided that you saved the file as an HTML file and closed it before uploading it.)

Once your presentation is created, everyone in the class can view it by clicking it.

Exhibit 7
Course Homepage

Introduction to Economics II - ECON20201
Home

WebCT
Web Course Tools Dr. Sam Green

(Icon) Syllabus	(Icon) Assignments
(Icon) Mail	(Icon) Chat Rooms
(Icon) Discussion Groups	(Icon) Presentations
(Icon) Online Tests	

Exhibit 8
Assignments Homepage

Introduction to Economics II - ECON20201
Home > Assignments

Assignments

Current date: (Date and Time)

Title	Availability	Grade	Status
OnlinePreparationAssignment	From: (Date and Time) To: (Date and Time)	2/2	**Graded**
Assignment1	From: (Date and Time) To: (Date and Time)	—/2	Not Submitted
Assignment2	From: (Date and Time) To: (Date and Time)	2/2	**Graded**
Assignment3	From: (Date and Time) To: (Date and Time)	2/2	**Graded**
Assignment4	From: (Date and Time) To: (Date and Time)	2/2	**Graded**
Assignment5	From: (Date and Time) To: (Date and Time)	2/2	**Graded**
Assignment6	From: (Date and Time) To: (Date and Time)	0/2	**Graded**
Assignment7	From: (Date and Time) To: (Date and Time)	2/2	**Graded**
Assignment8	From: (Date and Time) To: (Date and Time)	2/2	**Graded**
Assignment9	From: (Date and Time) To: (Date and Time)	—/2	Not Submitted
Assignment10	From: (Date and Time) To: (Date and Time)	2/2	**Graded**
Assignment11	From: (Date and Time) To: (Date and Time)	2/2	**Graded**
Assignment12	From: (Date and Time) To: (Date and Time)	2/2	**Graded**
Assignment13	From: (Date and Time) To: (Date and Time)	2/2	**Graded**
Assignment14	From: (Date and Time) To: (Date and Time)	2/2	**Graded**
Assignment15	From: (Date and Time) To: (Date and Time)	2/2	**Graded**
Assignment16	From: (Date and Time) To: (Date and Time)	2/2	**Graded**

Assignment17	From: (Date and Time) To: (Date and Time)	2/2	**Graded**
Assignment18	From: (Date and Time) To: (Date and Time)	2/2	**Graded**
GroupAssignment1	From: (Date and Time) To: (Date and Time)	2/2	**Graded**

Exhibit 9
Mail Page

Introduction to Economics II - ECON20201
Home > Mail

Select a folder to see your mail
You have 0 new messages in inbox

Compose Mail Message Search
Manage Messages Message Settings Manage Folders

Folder	Unread	Total
All	0	11
Inbox	0	11
Outbox	0	0
Draft	0	0

Exhibit 10
Mail Inbox Page

Introduction to Economics II - ECON20201
Home > Mail > Inbox

Mail Messages: Inbox / Manage Folders
Return to Mail

Compose Mail Message Manage Folders Manage Messages
Search Mark All As Read Update Listing

Select folder: [ ] Show all / Show unread Threaded / Unthreaded

Select all Select none Apply to selected message(s) below

Subject	Author	Date
2. **hello**	(Name) (SID #)	(Date & Time)
4. **hello**	(Name) (SID #)	(Date & Time)
10. **Explanations**	Dr. Sam Green (Course #)	(Date & Time)
11. **Postings Answers**	Dr. Sam Green (Course #)	(Date & Time)

Exhibit 11
Chat Page

Introduction to Economics II - ECON20201
Home > Chat Rooms
WebCT
Web Course Tools WebCT Chat

Room 1

Room 2

Room 3

Room 4

General Chat for Introduction to Economics II - ECON20201

General Chat for All Courses

Note: Conversations in the following rooms will be recorded:
Room 1, Room 2, Room 3, Room 4

Exhibit 12
Discussion Page

Introduction to Economics II - ECON20201
Home > Discussion Groups

Select a topic to see its messages

Compose Discussion Message
Search   Topic Settings

Topic	Unread	Total	Status
All	1	12	
Main	1	1	public, unlocked
Notes	0	0	public, unlocked
GA1 Solutions by Group3	0	11	private, locked
GA2 Solutions by Group3	0	0	private, unlocked

Exhibit 13
Student Presentations Page

Introduction to Economics II - ECON20201
Home > Presentations

Student Presentations
To view a project, click its linked title in the Project Column. (If the title is not linked, the presentation is not yet in place.) If the Group column contains links, click a group name to view the members of the group. To import files to your presentation, click Edit Files.
Note: Please remember to name your first page index.html.

Mail	Group		Project	Group Members
	GA2Group1		Group Assignment 2	
	GA2Group2		Group Assignment 2	
	GA2Group3	**[Edit Files]**	Group Assignment 2	

Exhibit 14
Quiz Homepage

Introduction to Economics II - ECON20201
Home > Online Tests

Quizzes and Surveys
View class statistics for quizzes.
View scores for quizzes
Go

Current date: (Date and Time)

Title	Availability	Duration	Grade	Attempts
SampleQuiz	From: (Date and Time) To: Unlimited	Unlimited	4/ 4	Completed: 1 Remaining: 1
Quiz1	From: (Date and Time) To: (Date and Time)	30 minutes	50/ 54	Completed: 2 Remaining: 0
QuizCh1	From: (Date and Time) To: (Date and Time)	42 minutes	75/ 108	Completed: 2 Remaining: 0
QuizCh3	From: (Date and Time) To: (Date and Time)	16 minutes	34/ 34	Completed: 2 Remaining: 0
QuizCh35	From: (Date and Time) To: (Date and Time)	34 minutes	70/ 77	Completed: 2 Remaining: 0
QuizCh2	From: (Date and Time) To: (Date and Time)	22 minutes	30/ 39	Completed: 2 Remaining: 0
QuizCh4	From: (Date and Time) To: (Date and Time)	38 minutes	53/ 57	Completed: 2 Remaining: 0

EXHIBIT 15

Hypothetical Graded Results for Question Illustration Quiz

Three-Question Illustration Quiz

User ID: Imaginary Student **Started:** (Quiz Date) 22:38	**Attempt:** 1 / 2 **Out of:** 25 **Finished:** (Quiz Date) 22:43	**Time spent:** 5 min., 8 sec.
Student finished 52 sec. ahead of the 6 min. time limit.		

Return to Scores

Question 1 (16 points)

Score 16 / 16

Question 2 (3 points)

Score 2 / 3

Question 3 (6 points)

Score 6 / 6

Total score 24 / 25 = 96.0%

homepage, 3) the mail page, 4) the mail-inbox page, 5) the chat page, 6) the discussions page, 7) the student presentations page, and 8) the quiz page. Exhibit 15 presents a representation of a hypothetical graded result of a quiz that consists of the three programmed questions, 1, 2, and 3, respectively, that are presented in Exhibits 2 - 4.

Findings and Conclusions

In consideration of the data presented in this paper and the knowledge and information gained from first-hand experience, the findings and conclusions of this study can be summarized as:

1. **The usage of *WebCT* at AUC has been extremely good over the two-semester period under observation**. The number of departments that have courses utilizing the program and also the number of sections within each department have both increased significantly from the first semester to the second. Moreover, the intensity of usage across courses varies considerably and appears to be independent of subject matter taught. This supports the claims of the producers that the product can be used as much or as little as one wants, irrespective of course content.

2. Although **training to use *WebCT* is required** and depends upon the intended intensity of usage, based upon available information it can be concluded that **the support staff of academic computing services is performing excellently in providing faculty training.** The best evidence for this conclusion is the large number of additional courses that were added between the first and second semesters in the 2001 - 2002 academic year. Other evidence can be found in Exhibit 1, which presents the training schedule. This exhibit illustrates the organization and careful planning of the staff in carrying out its training responsibilities. Finally, additional evidence can be obtained by examination of Exhibit 16, which presents a survey that was distributed to faculty who used *WebCT* in the spring semester. This survey shows that the staff is attempting to keep abreast of the training needs and desires of faculty by the collection of detailed information that can be used to improve the delivery of training services. From a first-hand perspective, the staff has always been supportive, provided information when requested and responded promptly to all requests associated with using *WebCT*.

3. **Many students were very satisfied with the progress they made using *WebCT*.** While not all students were initially enthusiastic about the use of the product because of the typing and uploading of assignments that was required, many students were excited about using computer technology in the classroom and utilized it effectively. Students have indicated that the most helpful tool was the quiz tool. The quizzes helped students to identify weaknesses before actual in-class exams.

4. ***WebCT* is an effective instructional aid.** The program facilitates the interaction of students that is necessary for improvement in understanding, even when great distances physically separate the students. Moreover, because of the increased monitoring capabilities created, the product improves the instructor's

ability to observe student progress. This facilitates better and timelier feedback to students. Consequently, use of *WebCT* permits a more in-depth examination of students in their efforts to learn the course material and to develop the ability to think more analytically and critically. With respect to the courses taught by this observer, **use of *WebCT* in the classroom has been an unqualified success**. In no uncertain terms, **students did learn more effectively because of *WebCT*.**

Policy Implications

Given the apparent success of the adoption of *WebCT* by AUC in its first year, it is likely that the program will be more heavily utilized in the future. Even if the number of courses that adopts the program falls over time, with increased knowledge, current users are likely to intensify usage by adding more tools and broadening the role for *WebCT* in classroom instruction. With more usage and more intensive usage come increased demands on the scarce available resources. The university will need to adequately prepare for the increase in demands on its resources.

In considering these likely future demands, the following issues must be addressed 1) Are the number and capacities of the current computer labs sufficient to handle increased usage by faculty and students? 2) Should the same number and capacities of the current computer labs be maintained in the plans for the move to the new campus? 3) Is the current server for *WebCT* capable of handling more usage and more intensive usage? 4) Are plans being made to increase the availability of ethernet

Exhibit 16
***WebCT* Faculty Survey**

In an effort to enhance *WebCT* at AUC, please take a few minutes to answer the following questions. Your assistance and comments are greatly appreciated.

Name: Dr. Sam Green
Email:
Department:
Phone:
Semester/Year: Spring 2002

1. **Is this your first time to use *WebCT*?**
   Yes
   No

2. **What courses did you actually design and teach using *WebCT*?**

	Course	Actually Used it
1.	ECON20206	
2.	Econ30201	
3.	ECON30202	

3. **Do you plan to use *WebCT* in the upcoming semester?**
   Yes
   No
   If your answer is **No**, *please indicate a reason:*

4. **What *WebCT* tools do you use or plan to use?** *(Mark all that apply)*

Tool	Used it	Plan to use It	Know it	Want more training	Comments
Syllabus					
Calendar					
Mail					
Discussion					
Content					
Module					
Assignment					
Quiz					
My Grades					
Other					
Other					

5. **Have you had any *WebCT* training** *(Check all that apply)*
   No
   Yes, Introduction to *WebCT*
   Yes, Syllabus, Calendar & Mail Tools
   Yes, Discussion, Assignment & Content Module Tools
   Yes, Quiz and My Grades Tools

6. **Was the amount of instructions you received in using *WebCT* adequate?**
   Yes
   No
   If your answer is **No**, *please indicate a reason:*

7. **Do you plan on attending *WebCT* Training in the upcoming Semester?**
   No
   Not Sure
   Yes, (*if yes, please mark all that apply*):
   Introduction to *WebCT*
   Syllabus, Calendar & Mail Tools
   Discussion, Assignment & Content Module Tools
   Quiz and My Grades Tools
   Other, *please specify*:

8. **Where do you go first when you need help?**
   Knowledgeable colleague

ACS *WebCT* support team
Online help

9. What is your preferred method of communicating with ACS support staff?
In person
By phone
Via e-mail

10. Where do you access *WebCT*?
Office
Home
Computer Lab
Other, *please specify:*

11. Have you ever tried to log in to *WebCT* and been denied access?
Yes
No

12. Did *WebCT* help your students learn?
Yes
No comment

13. Please add your additional comments below:

---

connections in the homes of faculty members that are planned for construction near the new campus? Adequate planning is required and will facilitate continued growth in the usage of technology in classroom instruction at AUC.

Beyond the required planning for increased participation in the program, the university must consider how its utilization of *WebCT* can affect its position in the global market place. AUC is the leading institution in this region of the world in preparing students to think analytically and critically. The university must seek ways to protect and strengthen its position. The administration has shown a commitment to improving teaching with the use of technology by purchasing the *WebCT* site license and establishing the Center for Learning and Teaching. Under the leadership of the president of the university, AUC sought and obtained a $750,000 grant from the Andrew W. Mellon Foundation to establish the center.[4] The center is responsible for coordinating all technology-assisted teaching activities at AUC.

Although these actions are laudable, it may be in the university's interest to find additional ways to distinguish itself from the other 52 institutions in Africa and the Middle East that have site licenses to use *WebCT*. One possible way of doing this may be to consider becoming a *WebCT* Institute for the region. *WebCT* Institutes are leaders in the field of technology-assisted instruction and provide services to other institutions in a given region. In the words of the producers of *WebCT* on the company's web page:

"WebCT Institutes are campus-based, regional resource centers. All WebCT Institutes share a commitment to creating exceptional Web-based and Web-enhanced instruction with proven track records in hosting WebCT courses, providing faculty development and support and focusing upon research to advance online instruction. They also share a desire to offer their services to surrounding communities.

"With WebCT's guidance, the Institutes are offering basic training workshops, course development support, an other WebCT services. In addition, they work in partnership to conduct research into online teaching and learning."

There are 41 *WebCT* Institutes, four of which are International *WebCT* Institutes located outside of North America. The international institutes are located in Finland, the Netherlands, the United Kingdom, and Australia. With the number of institutions in Africa and the Middle East that own site licenses at 53 and growing, there may soon be a need for a *WebCT* Institute in this region. It is in the interest of the university to consider this possibility as plans for the new campus are being finalized. To maintain its leadership in the region, AUC must fully evaluate the potential benefits and costs of seeking to further distinguish itself as the technology-assisted instruction leader in the region. According to the *WebCT* web page:

"All WebCT Institutes meet these criteria:

- The Institute has owned a WebCT site license for one year or more.
- At least 10% of the college faculty have received training and are actively supported in their teaching using WebCT.
- There is a commitment to training being offered by Certified WebCT Trainers, with a minimum of two trainers on staff."

To begin the evaluation process, a determination must be made as to whether the criteria can be met and the benefits exceed the costs. Irrespective of the outcome of such an evaluation, however, increased usage *WebCT* in classroom must be encouraged to improve instruction at AUC. Hence, in any case, the university must be prepared to facilitate increased faculty participation. Given the costs in time and effort associated with more fully utilizing *WebCT* in classroom instruction, the university must consider ways to reward faculty members who make the choice to offer their students more of the benefits of the program.

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[1] All facts in this report concerning the *WebCT* product were obtained from the company's website: http://webct.com.

[2] The other two institutions located in Egypt at the time AUC got its license were: 1) Cairo University - Faculty of Commerce and 2) Regional Information Technology Institute and Software Engineering Center. By the end of the academic year, Cairo University was the only other licensed user in Egypt.

[3] All information in this report concerning *WebCT* usage at AUC was provided by the AUC *WebCT* Administrator, Ms. Maha Amer.

[4] *President's Report 2001-2002*, the American University in Cairo, p. 2. ■

Computer Aided Lecturing and Review Using the Internet

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Keywords
Web-based Teaching, Multimedia, Probability, Statistics.

Abstract
This paper describes the development of web-based multimedia courseware to support teaching activities at the American University in Cairo (AUC). The courseware supports a computer aided lecturing and review philosophy where it is used as a lecturing aid by the instructor and as a learning aid by the student. The courseware contains two modules that are directly related to courses taught at AUC in the areas of advanced manufacturing and project management, and a general module that provides a review of basic probability and statistics. The latter module is currently used for review by graduate students in a course on modeling and optimization. This paper will focus on this module, as it is the most developed of the three.

The probability and statistics module contains the following features
1. A presentation facility for supporting computer aided lecturing and learning.
2. Illustrations and examples of different applications to accommodate the various engineering disciplines.
3. A flexible architecture to allow for future inclusion of related statistical topics.
4. Review of learning material in a structured, as well as, a random way at different levels of detail.
5. Web-based to provide wider accessibility to all features of the program and to provide direct links to useful materials.

Currently, the course includes 4 sections: Introduction, Descriptive Statistics, Probability Theory, and Discrete Probability. In each section, the material is covered through overview, presentation, examples, exercises, and summary. The overview provides a concise and complete coverage of the topic. The presentation is designed for class delivery and student review. Summaries highlight the important concepts in each topic. Final answers to all exercises are given. The student may also choose to view a similar example or the detailed solution of any exercise problem. Course materials may be viewed at:
http://www.aucegypt.edu/gaafar/.

Introduction
The "web" is an attractive delivery system for multimedia, and many teachers believe that replacing text with pictures and other media will bring about much

better student learning (Brooks 1997). Web-based teaching has gained wide acceptance over the past decade as an effective teaching approach. The web provides continuous access to plenty of useful information. Many of the time-consuming class activities may now be delegated to the web, opening the door to more student involvement during lectures. These activities include handout distribution, homework solution, and announcements. Coupled with multimedia, the web offers tremendous power. Compared to the traditional textbook education, multimedia-based education offers significant features including: dynamic generation of scientific plots, animation, hypertext, sound and video clips, examples with gradual complexities, partially solved exercises, annotation, custom-generated summaries, links to different subjects, easy searches, custom-designed color codes for better presentation, and easy cross-referencing. Also, as Masie (1997) points out, the web is better suited to support cooperative learning with all its documented benefits.

As Engst Noted, the "web" is both a new and mushrooming phenomenon (Engst 1995). While few sites exist in the areas of manufacturing and project management, there is a plethora of websites that address the topic of "probability and statistics" to the extent that some sites are dedicated to catalog other sites. Some of the sites and resources reviewed for the development of our site are described below.

aml2.eng.rpi.edu/GMPWeb/ClassNotes.htm is a website developed by Sam Chiappone. It contains several PowerPoint presentations on various aspects of manufacturing.

www.augsburg.edu/ppages/schwalbe is a website developed by Kathy Schwalbe dedicated to Information Technology Project Management. The site contains a list of presentations on the various areas of project management tailored to the information technology field.

SticiGui© (Statistical Tools for Internet and Classroom Instruction with a Graphical User Interface, http://www.stat.Berkeley.EDU/~stark/SticiGui) is a web-based application developed by Philip B. Stark of the Department of Statistics at the University of California Berkeley. SticiGui© provides extensive coverage of a wide variety of statistical topics. It also provides many interactive applets on basic probability and statistics topics.

Internet Statistics Resources (http://www.colorado.edu/EngMgmtProg/usrey/5550/wwwstat.html) is a site that provides reference material on some statistical topics of interest. It is not, however, structured in a course format. It includes useful applets that explain many topics related to the normal distribution including the central limit theorem and normal approximations.

Virtual Laboratories in Probability and Statistics (http://www.math.uah.edu/stat/) is a site that includes a set of web-based modules of probability and statistics. The site is divided into chapters, similar to chapters in a conventional book. The chapters are grouped into four general areas: Special Models, Basic Probability, Basic Statistics, and Appendices. The site includes many interactive applets and exercises.

Studyworks Statistics is part of an integrated CD-ROM program on science. The statistics module provides extensive coverage of topics including: Picturing

Data, Measures of Central Tendency, Measures of Dispersion, Probability, Normal Distribution, Correlation and Regression, Inferential Statistics, and Statistics Explorations. The module includes a set of exercises that are not interactive.

It is our opinion that students of a first course on probability and statistics need significant guidance through the course material and cannot be left to wonder on their own through many of these sites. We also believe that the Internet should be used in a supporting role to the instructor and the student. This may be achieved when the contents of the website are closely related to the lectures and are neatly integrated. The following section describes the website that is being developed to achieve these objectives.

The Website

The reported website was developed to support the author's teaching activities in the Mechanical Engineering Department at AUC. The website may be accessed at www.aucegypt.edu/gaafar. The opening screen is shown in Figure 1. It contains links to general teaching information and to the various courses. The general information includes the teaching policies of the instructor that outlines, among other things, his teaching philosophy. The general information also includes information on how to deliver effective oral presentations and how these presentations as well as written reports are evaluated.

The 'current courses' area includes links to courses that are taught at the time of visiting the website. A typical course screen is shown in Figure 2. It includes self-explanatory links to various course areas. The 'Course Notes' link leads to further links to presentations and documents covering most of the course content.

The last area on the opening screen (Figure 1) links to a review course on 'probability and statistics.' This course was sponsored by the UNESCO Cairo office through the USEE program that seeks to upgrade science and engineering education. The project was originally planned for two years, but was stopped after the first year due to the principle investigator moving to another university. Accordingly, the website provides only partial coverage of the targeted topics. The course's main interface is shown in Figure 3. The user never leaves this interface as all contents are displayed through it. The top part shows the title and the main choices (*Main, Introduction, Descriptive Statistics, Probability Theory,* and *Discrete Probability*).

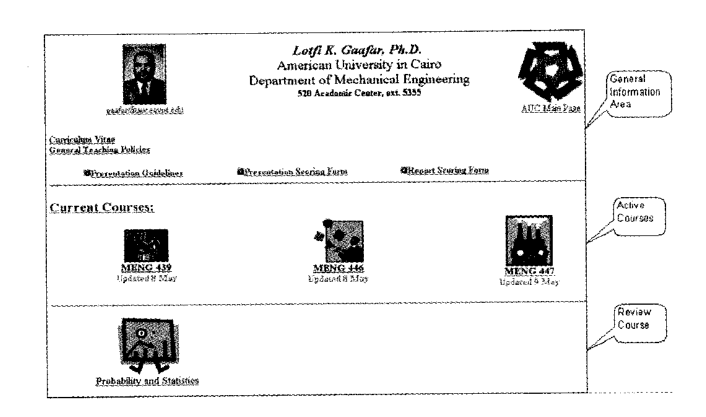


Figure 1. The site's opening screen

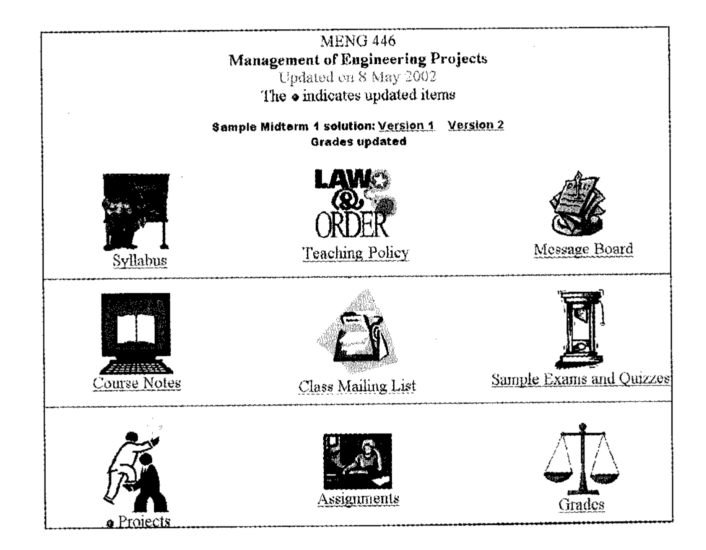


Figure 2. A typical 'current course' opening screen

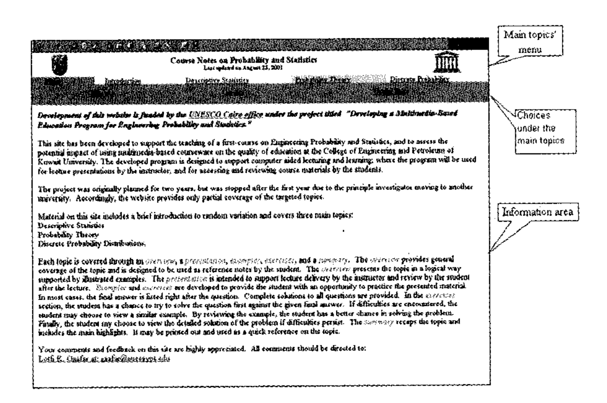


Figure 3. The opening screen of the probability and statistics review course

The *'Main'* choice displays general information about the site. Course materials are contained in the remaining sections: *Introduction, Descriptive Statistics, Probability Theory,* and *Discrete Probability Distributions.*

The *Introduction* section provides an overview of the course emphasizing the importance of the course and its potential applications. A sample screen from the *Introduction* is shown in Figure 4.

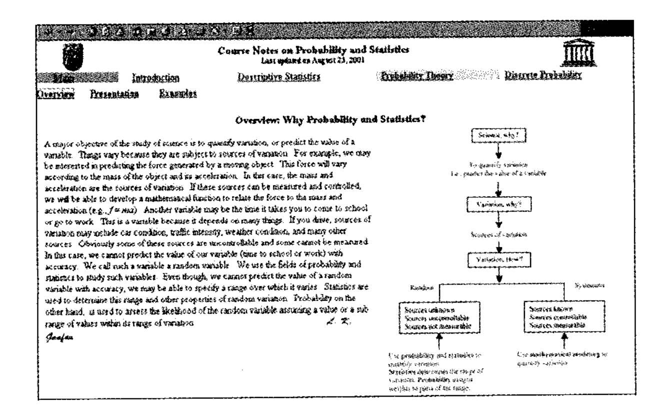


Figure 4. A sample *Introduction* screen

The remaining sections cover the topics implied by their titles. Each topic is covered through an *Overview*, a *Presentation*, *Examples*, *Exercises*, and a *Summary*. The *Overview* provides general coverage of the topic, and is designed to be used as reference notes by the student. The *Overview* presents the topic in a logical way supported by illustrated examples. It is contained in a "pdf" file. The *Presentation* is intended to support lecture delivery by the instructor and review by the student after the lecture. The content of the *Presentation* is generated from the *Overview* and both are tightly synchronized. Hence, listening to, and reviewing, the *Presentation* will help students better understand the *Overview* and the topic in general. The *Presentation* includes additional examples that further emphasize important points. A sample *Presentation* screen is shown in Figure 5.

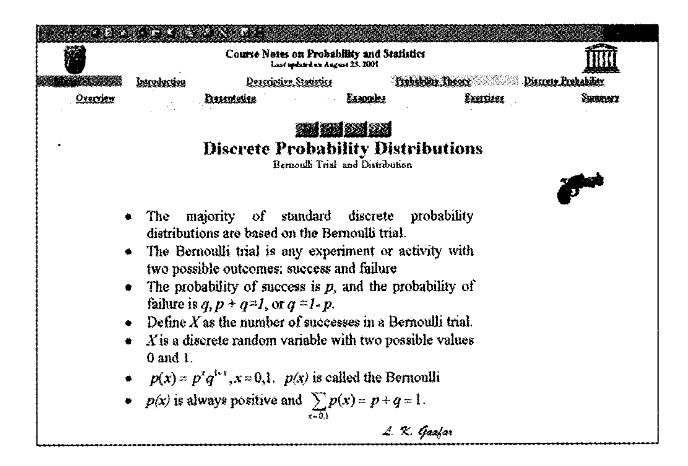


Figure 5. A sample *Presentation* screen

Examples and *Exercises* provide the student with an opportunity to practice the presented material. In most cases, the final answer is listed right after the question. Complete and detailed solutions to all questions are provided. In the *Exercises* section, the student has a chance to try to solve the question first against the given final answer. If difficulties are encountered, the student may choose to view a similar example. By reviewing the example, the student has a better chance in solving the problem. Finally, the student may choose to view the detailed solution of the problem if difficulties persist. Figures 6 and 7 show sample *Example* and *Exercise* screens, respectively. Currently, the site contains about 60 examples and exercises with detailed solutions, in addition to the worked examples in the *Overview* sections. Most of the examples and exercises are adapted from Hines and Montgomery (1990) and Walpole and Myers (1989).

The *Summary* recaps the topic and includes the main highlights. It may be printed out and used as a quick reference on the topic. Figure 8 shows a sample *Summary* screen.

Future Work

As mentioned earlier, the website development was cut short due to the principle investigator moving to another university. Currently, the site does not include many of the originally planned features. Future activities will focus on incorporating these features including adding sound messages to all presentations, expanding the coverage, adding partially solved examples, adding few electronic experiments to explain some random variation concepts. Also, the website will be evaluated for content, attitude, and achievement.

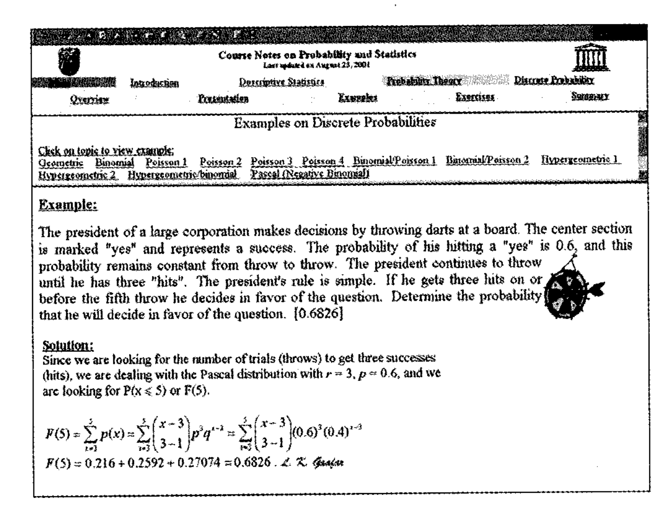


Figure 6. A sample *Example* screen

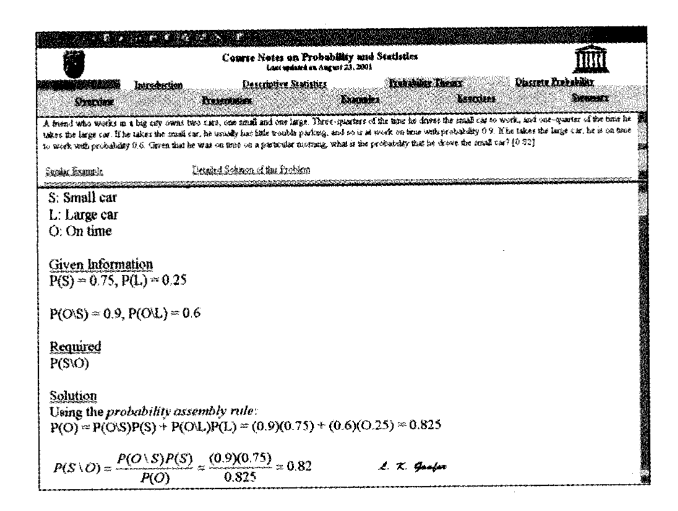


Figure 7. A sample *Exercise* screen

Figure 8. A sample *Summary* screen

Conclusions

A website that provides partial coverage on a first course on probability and statistics was introduced. Topics are covered in a simple and integrated environment. Each main topic is covered through an *Overview*, a *Presentation, Examples, Exercises*, and a *Summary*. These items are closely related. The site is designed for class use by the instructor, as well as for learning by the student. This allows instructor guidance that we believe is vital for a first course on probability and statistics. The site contains many examples and exercises all of which are completely solved to appropriate details. Examples and exercises are closely linked to allow the student to recall a similar example when working on a problem. Some of the provided exercises may be used as homework problems with their solution blocked until after the homework is due. Future enhancements of the system are planned after a comprehensive evaluation of its current contents.

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Good Intentions are Not Enough
The Slippery Road to Plagiarism

Ms. Jayme Spencer, Library

A recent study of 4.500 high-school students in the US found that 75% of them had cheated. More than half had plagiarized. The conclusion was even more disturbing: "...most of them don't see anything wrong with cheating....What's important is getting ahead...if you learn to cut corners...you're going to be saving yourself time and energy." (Slobogin, 2002)

Over a year and a half ago, I spent quite some time researching the subject of plagiarism, focusing on Internet plagiarism, in order to construct a web page on that subject for the AUC community. The content of today's paper is a result of that research and my ongoing interest on the subject. I have not had any input from the Faculty Senate committee currently studying plagiarism and other forms of academic honesty. It was only recently that I learned that such a committee existed.

Certainly, plagiarism has been a "hot topic" in the media recently. Doris Kearns Goodwin and Steven Ambrose, two respected scholars, have been accused of plagiarism. Both have admitted to some forms of plagiarism and expressed contrition. I used their cases to discuss the concept of plagiarism with several classes of AUC freshmen and was not completely surprised by their reactions. None of the students (about 55 students spread out over 4 class periods) were persuaded that what either Kearns or Ambrose had done constituted plagiarism – indeed, all were adamant that these were minor mistakes and were appalled when I told them about the consequences that had ensued. In the case of Steven Ambrose, he has made this public statement: "I wish I had put the quotation marks in, but I didn't. I am not out there stealing other people's writings. If I am writing up a passage and it is a story I want to tell and this story fits and a part of it is from other people's writing, I just type it up that way and put it in a footnote...." (Ambrose as quoted in Gray, 2002) Dr. Goodwin's defense sounds eerily like that of many of our own students - "I wrote everything in longhand in those days, including the notes I took on secondary sources.... Drawing on my notes, I did not realize that in some cases they constituted a close paraphrase of the original work." (Goodwin as quoted in Gray, 2002) The responses by Goodwin, Ambrose and other academics similarly accused fit with responses elicited from students in a 1997 study of cheating and plagiarism in the United Kingdom. The study found that "A central element of this fear (being found guilty of plagiarism) was the almost unanimous belief that plagiarism can occur by accident, regardless of personal awareness of the university regulations." (Ashworth, 1997)

Careless or unconcerned? If the professionals can't seem to get it straight, what's a poor student to do? I have surveyed students on an informal basis for the last year, recording impressions and ideas. The students I have surveyed seem to fall into three major categories of the academic dishonest:

(1) Those who do not understand the sketchy policy presented in the AUC

Student Handbook. Without concrete examples of what might be construed as plagiarism, it is often difficult for a student to recognize the line between plagiarism and sloppy referencing. Following the construction of the plagiarism website last year, I recommended that the AUC policy be expanded and offered several examples of excellent sites that presented details for faculty and students alike.

(2) Those who don't believe that a little cut and paste or forgotten quotation marks constitute plagiarism. That 1997 study of student attitudes toward plagiarism and other forms of academic honesty in the UK found that "In general, plagiarism is a far less meaningful concept for students than it is for academic staff, and it ranks relatively low in the student system of values...the verbatim use of an author's words obviously counts as plagiarism, but paraphrasing their argument in one's own language renders the offence in some way different, lesser."

(3) Those who really don't care, who are willing to do whatever it takes to get the grade/the diploma.

For the purposes of this paper, I consulted the records of the Office of Student Affairs' Academic Honesty Committee from 1996 until January 2002, recording cases of reported plagiarism, their types and sources. This committee considers only the most drastic cases of academic dishonesty so the figures I am presenting do not reflect the full numbers for the subject. (OSA/AHC, 1996-Jan. 2002)

Date	**assignment**	**term paper**	**text**	**internet**
Year 1996	1		1	
Year 1997	2	3	5	
Year 1998		4	3	1
Year 1999	2	3	4	1
Year 2000	1	4	2	3
Year 2001	8	7		15
Year 2002		4		4
TOTAL	**14**	**25**	**15**	**24**
AS=2	JMC=1	PS=21	PVA=2	
FWP=4	Mgt=3	Psych=5	unknown=1	

Chart A

However, Charts A and B show the dramatic rise of plagiarism, especially the increase of Internet plagiarism.

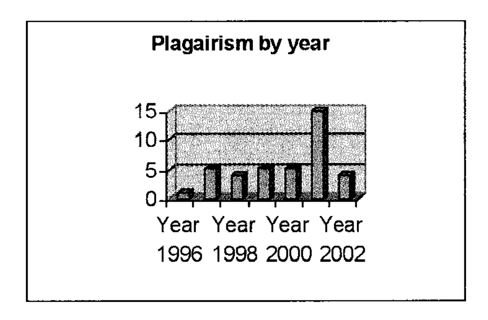


Chart B

With the introduction of computerized databases here at AUC and searchable websites, the amount of information readily available is overwhelming as is the temptation to cut and paste as well as to purchase or purloin papers online. Chart C shows a dramatic rise in Internet plagiarism reported cases for term papers in 2001. 21 of the 39 cases over the last 6 _ years are accounted for in the Department of Political Science. Those numbers may be accounted for by heightened awareness of Internet plagiarism but there must be others factors at play here for such a large number of cases from one department.

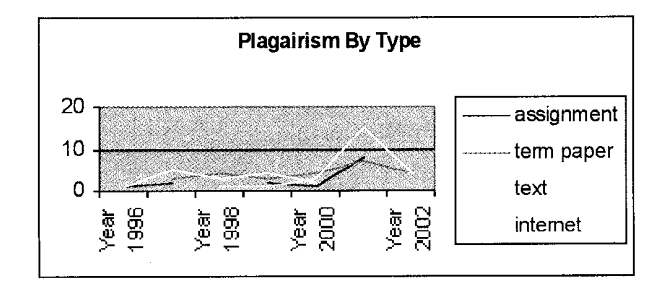


Chart C

This problem is not new. Term paper mills have been around the edges of schools and universities for many years, small ads tucked into local papers, cards on bulletin boards, always requiring time and effort to find and acquire. Now it is a high-tech industry only a click away. The Internet provides instant, easy access to papers, essays, reports, etc on a worldwide basis.

Thankfully, it has also provided methods to detect such plagiarism. The increase in reported plagiarism at AUC is really a factor of this ease of detection and a new awareness on the part of the faculty. The single reported case of plagiarism in 1996 was probably not the only case in the university that year – just the only detected one. Consequences for plagiarism at AUC range from a formal warning letter in the academic file, a failing grade in the course, AUC community service, suspension for a semester or a year to dismissal from the university.

Now, I would like return to the first of my three categories. In searching through the records, I found more than one student who plead ignorance. One student insisted that "...(she was) unfamiliar with the AUC policy on Academic Freedom and did... not believe that asking a friend to do her research was plagiarism." (OSA / AHC files) I particularly liked the student who blithely wrote: "I am willing to undergo further punishment as long as it doesn't affect my academic progress." (OSA / AHC files) Some of the students appeared to be victims of cryptomnesia - inadvertent plagiarism in layman's terms. These students received warning letters. In the absence of clear guidelines, students make their own judgments. I think that a deeper awareness of the nature of plagiarism would have helped the students in this category

There is a need to expand the AUC policy and provide examples of just what is and what is not plagiarism. There are ample policies out on the Web to provide guidance for anyone proposing to develop such a policy. There should also be a central office for faculty as well as student guidance on the issues surrounding plagiarism. The Writing Clinic seems an appropriate place since they already deal with writing and are often consulted by faculty concerning term papers and other writing assignments for their classes.

The category two student believes that there has been no plagiarism, merely technical oversights that shouldn't affect the assessment of the paper's content. Accused by his professor of plagiarism, this student refuted the allegation with this statement: "I would like to draw the committee's attention to the fact that my being accused of plagiarism is not more than a proofreading discrepancy on my part, since I neglected to place quotation marks around the quote. Furthermore, I would like to point out that all the sources I used were explicitly cited after each quote. Had I intended to plagiarize, I would not have place the source after the quote after I used it." (OSA / AHC files) Shades of Steven Ambrose! As in category one, the key here is to educate the student population through teaching and example. Most of the authorities on plagiarism place primary importance on the instructor being aware of the writing process of his / her students — the theory is, control the process and the amount of plagiarism will be reduced. A good start has been made in the new Writing Program. The old FWP certainly taught students that plagiarism was wrong but this new program emphasizes the different forms that plagiarism may

take and teaches students strategies to avoid inadvertent plagiarism.

There are two groups of students who fall into category three: those who are unable to complete the assignment for reasons of stress or illness and those who don't care, who are willing to do whatever it takes to get the grade or diploma. Among the cases I examined there were instances of students writing papers for other students, students using relatives' papers from previous years but very few cases of students writing papers for money. Most seemed cases involving stress, illness, or lack of academic competence. In response to action taken against her in a case of plagiarism, one student asked for leniency because she didn't know that the friend who promised to help her actually copied a paper from the Internet. (OSA / AHC files) The second group can't be bothered and simply looks for outside papers, whether from siblings, friends or websites. Of course, the website papers usually cost so there is not as much of this type at AUC as there is in the US. Not all charge however – as in the instance of **Term Paper Sites** , a business that maintains lists of term paper sites for all levels: junior high and high school, undergraduate university / college as well as sites that specialize in graduate work! It features pay and free sites. One of it's policy statements is: "This site should not facilitate cheating." (**Term Paper Sites**, 2001) On the AUC Library Plagiarism Website you can find a list of some of these term paper sites.

Another site gaining in popularity is Questia, a site that claims to offer "help" for the beleaguered student. It was no mistake that during the mid-semester, while term students are studying for exams and franticly searching for term paper material, that I kept getting emails from Questia – promises to "save at least 9 hours AND make a better grade on your next paper." Questia. 2002) It also promised to provide citation and bibliography tools. In this latest mailing the promise is to impress your professor – here at AUC you can use a far larger library of books and periodicals to impress your professor and it is for FREE! This subscription site appears to offer convenience and pain-free research.

So what can be done about plagiarism here at AUC? There are some local solutions that can be applied. Here is a list compiled last year for the AUC Library Plagiarism webpage:

- The simplest and least expensive way to use the Internet if you suspect plagiarism is to pick out a unique-sounding phrase in the suspect paper and type it into the search box of a search engine. You may need to use more than one search engine. AltaVista and HotBot are particularly good for this type of string searching. This technique is not foolproof and may take you some time to track the material.
- Check the AUC Catalog to determine if books cited in the bibliography are available locally.
- Check the Online Periodical Databases to verify articles cited in the bibliography.
- Consult the AUC Writing Center at 797-6323 or 797-6324.
- Select a particularly well-written paragraph and construct a Cloze test for the student to complete under your supervision.
- Ask student to summarize the main points of the paper on the final exam.

In conclusion, there are several recommendations that I would like to propose:

- A study similar to the UK study should be undertaken at AUC to examine the student perspective on cheating and plagiarism. Most of what has been written about plagiarism has looked at the issue from the academic or faculty side. By understanding the concerns and or misconceptions of our students, perhaps we could construct a more detailed AUC policy.
- Rewrite the AUC Academic Policy Statement. This policy should provide clear guidelines for what plagiarism, giving both positive and negative examples. Statements detailing what is and is not acceptable together with information on the official procedures which will result if plagiarism is suspected should be developed. The UK study reported "What became very apparent from analysis of the interviews was the widespread ignorance concerning the correct procedure to follow when making use of other texts in one's own academic work." (Ashworth, 1997) If this is true in the UK, we may assume that it is also true here.
- Education at the student level concerning plagiarism should be increased and not limited to freshmen only. "The research findings point to the imperative for a clear communication of plagiarism which are readily comprehensible to students." (Ashworth, 1997) All faculty should spell out in their syllabi that plagiarism will not be tolerated. It has been suggested by several writers that students who know that faculty are aware of term paper sites are often deterred from using them.
- Education at the faculty level on assignments and term papers should be encouraged. There are methods that discourage plagiarism.
- There should be a center where concerned faculty could consult concerning teaching methods and plagiarism detection. At this time, the Writing Clinic would appear to be a natural place for such activities.
- It has been suggested several times in the past year that AUC should acquire a subscription to one of the plagiarism detection sites. That it has not is probably more a factor that there is not a clear place to house such a subscription (who would administer and maintain the service?) than the actual cost. Many universities depend on search engines such as Google to find cases of plagiarism.
- Before finishing this paper, I spoke to Dr. Nancy Peterson about the work of the Senate committee. From our conversation, it became obvious that this committee will be recommending many of the items I have listed above. Their investigation and report is an excellent starting place. I look forward to reading the report and seeing the implementation of their recommendations
- And last, but not least, consult the AUC Library Plagiarism webpage. Go to: (1)**AUC Library Homepage**, (2) **Selected Web Links**, (3) **Plagiarism** to learn more about detecting and combating plagiarism.

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The Role of Library Technology Services in Distance Learning

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Abstract

As higher education moves into the twenty-first century and reaches outside the physical boundaries of the university and college campus, technological changes are impacting the delivery of education to distance learners.

Distance learning is becoming popular, steadily growing, and gaining acceptance. Distance learning provides an equal opportunity for education to the communities, which are unable to attend normal classes using traditional learning methods. Business and corporate training programs are rapidly heading the same way.

Academic libraries are the center of learning and gathering information and they are seen as a central activity in the life of any student. The enormous technological changes, which occurred during the end of twentieth century, forced libraries to adopt new technologies to offer better services for users. Their services expanded to cover online electronic resources, Web OPAC support and electronic document delivery, for example.

This paper focuses on the growth of library technology services and their roles in supporting distance learning, and discusses distance learners' expectations of library services support. Distance learners require additional library services, to help them conduct research and fulfill their assignments. They will also need to have the corresponding resources available to them in an easily accessible digital format from a digital library. The paper will also highlight the library specialists' contribution to developing distance education programs and the ways in which they can help to match information resources to course objectives, teaching and learning styles, and subject content to facilitate creative thinking and analysis among students.

The success of a distance education program depends upon the ability of library specialists to network with faculty, students, administrators, technical experts and data-base vendors. User's expectations rise to the fiction that everything is available on the Web and consequently the demand for electronic access to information is growing [15].

The ability to make information available in timely, convenient and cost effective manner becomes the true measure of high quality distance learning services. As these cooperative efforts develop, universities have an opportunity to respond to market needs for more flexible options for lifelong learners.

Introduction

Distance Education is a general concept where students take an interest in and responsibility for their learning, while educators provide the required materials for students to meet their individual objectives in learning. This type of education provides the students with the availability to study at their own pace, and to overcome the disadvantage of limited time, distance or physical disability, to

reaching their learning goals. It also helps to update the knowledge base of workers at their places of employment.

Distance learning is not a new trend; it has been a method of teaching and learning for individuals for at least a hundred years. Correspondence education, educational radio, and educational television are all different types of distance education.

Today, a large majority of colleges to universities offer distance learning. There are by one estimate 6,000 courses online. In 1998, approximately 5% of college and university students took distance-learning courses; by 2002, this share is expected to be 15%. Business and corporate training estimated that by 2003, 50% of corporate training would be distance learning [14].

Distance Learning Technology Tools an Overview

With the rapid technological change a wide range of technological tools are available to the distance educator. We could describe them in four major categories:

Voice Media

Instructional tools include:

- Interactive technologies like telephone, audio conferencing and short wave radio.
- One-way audio tools such as tapes and radio.

Video Media

Instructional video tools include

- Still images such as slides, films and videotapes
- Real-time moving images combined with audio conferencing (video conferencing)

Computers

Computer applications for distance learning are varied and include:

- Computer-assisted instruction; self-contained teaching program to present individual lessons such as training courses.
- Computer-managed instruction to organize instruction and track student records and progress.
- Computer-mediated education computer applications that facilitate the delivery of instruction such as Email, Fax, real-time computer conferencing and World Wide Web applications.

Printed Material

Printed material is the base element of the distance-learning program from which all the other delivery methods have evolved. Print formats include:

- Textbooks
- Study guides
- Workbooks
- Course syllabi

- Case studies.

These wide varieties of technological tools give the educator one of the most effective keys in delivering an integrated instructional media, which meets the needs of the learner.

Moreover, for distance education to reach its goals in the coming era collaboration of different sub-systems becomes essential and can be seen as the real factor for distance learning success [12]. The following describe briefly the sub-systems that affect distance learning:

- Hardware and software technologies, which include computers, printers, Fax machine, and software programs to enable retrieval and access of the required information.
- Means of telecommunications, which keep contact between students and teachers.
- Academic programs and courses
- Library technology services, which provide support to academic programs and courses.
- Management system which keep the entire system together
- Social system which provides funding, and regulate the operation
- International systems, such as World Wide Web, which allow people in different countries to engage in teaching and learning at a global level.

This paper focuses on the library technology services as one of the key factor that affects distance learning, it emphasizes how the change in the library role can support distance learners in conducting their search and fulfill their assignments. It highlights the library specialists' contributions to developing distance education programs.

Library Technology Services and Distance Learning

Before we start talking about the library technology services and its role in supporting distance learning, let us take a look at the functions of the library system. The traditional library systems are fulfilling the following functions:

- Library collection acquisition and ordering
- Library Cataloguing
- Reference services
- Public access catalogues
- Serial control
- Circulation and course reserve services
- Interlibrary loan

Earlier, at the end of 1980s and beginning of 1990s, a lot of technological changes took place, computer systems were introduced and the increasing availability of microcomputer software and hardware extended the use of library technology services to all sizes and categories of libraries. Library technology

services had faced the challenge to adopt and deploy new systems to achieve the needs of handling more information, great efficiency and enhanced services.

Develop Distance Learning Library Services

Modern management studies addressed the implementation of new services by focusing on customers' expectations and needs. For libraries to serve the distance learners, library staff should focus on who is using the services, how they do so, and what are their needs and expectations. Library staff with a good understanding of distance users needs, the environment in which they use services, and their perceptions of how services and resources are provided will experience greater success in satisfying them [9]. Distance learners' expectations and needs will be discussed in order to highlight how libraries could develop and improve their services. However, the goal should not be simply to meet expectations but rather to exceed them.

Distance Learner Needs and Expectations

To identify the needs and expectations of distance learners some points should be addressed such as the recognition of the various groupings of remote users, their distance with respect to the university campus in which they are enrolled and their ability to use electronic information resources.

Distance learner Characteristics

Distance learners range in age from high school through undergraduate, and graduate students to adults and older adults. Statistics shows that most students enroll in distance education courses are over twenty-five years old, are employed, and have previous college experience. Over half of them are female [17].

Distance education students' study on a part time basis, they are able to devote only part of their time to study because of the demands of full-time or part time jobs and the obligations of family. Consequently, they need education in more intense doses. They are also highly motivated and exhibit ambition due, in part, to their older age and a sense of maturity that is often associated with having a family or a well-established career. Their goals are often clear-cut; they are likely to identify with some certainty, the careers to which they want to devote their energies, and the skills they wish to acquire [7]. Time is very precious to them and, when they decide to devote some of it to further study, they take that study very seriously. While some remote users may already be familiar with libraries, many posses limited experience with library research and are unfamiliar with electronic resources. Their technology backgrounds may be more limited, and they may have less access to computer technical support. They may experience the fear of technology usage, which might create anxieties that interfere with learning and using new tools and facilities.

Many of the distance-learning students were not expected to be near a major population center with a library capable of meeting their research needs.

Needs of Remote Library Users

Remote access is not a new service for libraries; staffs have long communicated with their users in writing or via telephone. What is new is the rapidly increasing number of library remote users, which evolved with the huge technological development, and the increasing number of Universities offering distance-learning courses.

From the previous discussions we could sum the remote users needs as follows:

- They want to know how to login to the main campus Library server from their PCs at home, or work
- They need to be educated in the use of technology and the use of library resources.
- Search the library catalogue through easy Web based OPAC with a user friendly interface
- Search periodical indexes, abstracts, CD-ROMs, and the online databases.
- Do electronic book check outs, and renewals
- Deliver photocopies, and microfiche duplication
- Have answer to their research questions and have speedy document delivery services.

Library Services And Distance Learning

Distance learning growth has implications for library services to enhance this nontraditional learning environment. Distance learners require ancillary service, especially library services, to help them conduct research and fulfill their assignments.

With the philosophy that library research is an essential component of quality education and the belief that distance learning courses should be of equal or superior quality to the same courses offered on campus, library services are considered as an integral aspect of the student's educational experience rather than merely as a support system. York summarized this view in 1993:

> "Learning depends not only on classroom instruction and dialogue, but also on the student's ability to seek out critically analyze information...Library services are not just another support service; they are necessary component of any educational experience and an integral part of a lifelong learning process. As distance education degree programs continue to grow and are influenced by technology, planning is essential to meet the information needs of students enrolled in these programs."[2]

So, libraries face the challenge, of not replacing the traditional library with the electronic Library but to find ways to blend the two together to create an integrated solution, so that as far as possible users do not need to concern themselves with

format or location or access method, but can be supplied with whatever the appropriate content turns out to be, like Peter Brophy [1] said in his paper

" Every user, regardless of his or her physical location, should be able to use all library services"

A good model of an electronic library is not presented yet. However, we can define some fundamental principles, which have a wider significance in the design of distance libraries, these principles includes:

- Centralization of access [2]; close integration between the design and delivery of the curriculum [1].
- Immediacy of access [2]; the widest use of networked electronic information resources to maximize access and availability to dispersed users
- Rapid turnaround time for remote delivery [2].
- At each site, develop designed learning center containing access and enquiry points, to study facilities and collections of printed / audio / visual materials in constant use [1].
- Empowerment of students to access information and to perform their own research on a self-service basis [2].
- Appropriate administrative systems which enable resource discovery, resource sharing and resource delivery.

Information Literacy

Instructing students in information literacy skills needed for distance learning has become an essential component for libraries to support distance learning. Information literacy ultimate goal is to enhance students' ability to retrieve information needed for their courses on a self-service basis.

Information literacy should provide for students and faculties engaged in distance education the following:

- Develop brochures outlining the most essential library services for distance education [3].
- Instruct distance students on the use of the online library catalogue and other electronic services using different methods of training (video tape, Web instruction tools, online chat)
- Develop and maintain a library distance education web resource with links to other Internet sites relevant to the content of distance learning education courses.
- Develop tutorials on web and library research on the library web page [3].
- Printed handout for each course, which illustrates (with captures of computer screens) the exact steps for accessing the professor's home page and the library resources accessible therein [3].
- Help professors in developing their course materials including the necessary links to library resources, which enable students to have one access mechanism and reduce time for reaching their course materials and search.

Reference services

Reference service is considered the front-line service in an academic library. It is the main service point for most students, faculty, staff and researchers, which can contact asking for help and receive assistance in finding information. Modern library technologies have given rise to amazing advances in reference electronic services. Reference services expand their normal services of reference shelves, which include bibliographies, dictionaries, directories, encyclopedias, handbooks, indices, to support other technology services, which include online OPAC search, online databases, Internet usage, multimedia, etc. The reference goal of the library support for the distance learning program is to enable students at remote locations to have not only the same services provided to on-campus patrons, but to provide such services in an adequate manner, helping them to overcome time constraints, their fear from the use of technology, and their inexperience in searching and gathering information needed for their studies. The following are some ideas for providing such challenged services:

- Create Internet based reference collection [15].
- Group the collection to areas of interest to simplify search
- Evaluate potential reference sites to provide the most valuable ones.
- Create a contact list to provide e-mail based reference and research assistance to distance students.
- Help students to identify resources for their topic by creating a search list of the most important materials relative to their course objectives.
- Perform special search and deliver its results for distance students temporarily without access to computers.
- Provide access to databases (Library of Congress, National Library of Medicine, and Eric) for searches to determine books and journals relevant to course content [3].
- Availability of sending a question directly to the reference librarian from the course web page, which is associated with the distance learning support.
- Provide online support using different tools (e-mail, chat programs, Web based help desk system, telephone, video conferencing)

Document Delivery services

An easy to use virtual information service is vital for off-campus students. Technology raises the level of students' thinking making them aware that every thing is available on the Internet. With the large number of online databases in full text, users still strive for information that is not available in their required form. Books, microfilm and other printed materials are still in need for distance learners. From that point we can see the importance of the document delivery services to make specifically identified materials in full text available to students in the shortest possible time. It's the staffs responsibility to obtain the material from anywhere in the world and deliver it to their distance students.

The document delivery services should offer:

- Access via web to selected databases
- Access to required readings placed on course reserve
- Full text database search available or scanned into machine readable form
- Delivery upon request via fax or email
- Retrieval of books (including charging and delivery of books to students' homes via first class mail) [3].
- Retrieval of micro format material and deliver to student [3].
- Retrieval from other libraries via the OCLC electronic interlibrary loan system of books and delivery directly to students
- Retrieval via the Internet (Arial document delivery system) of journal articles not held by the library [3].
- Assistance with the development of professors' individual home pages (including scanning of professor-generated material into electronic form)
- Course reserve
- Maintain the books and journal request forms

Distance education students should be informed that their library requests should be submitted well in advance of any deadlines because not all items requested will be immediately available on campus [3].

It should be clear that while some materials can be obtained in a few days from commercial suppliers, it might take a few weeks to be obtained from other libraries.

Collection Development

Collection development is considered the cornerstone of all library services [4]. Distance learners are in need of the collection just as the on-campus users. Being away from the campus and unable to reach the library creates the need of a collection development policy that fulfills the students' needs. Policies will cover the following:

- Calculate the optimum number of multiple copies of a title to be purchased taking into consideration the number of students' enrolled off-campus and on-campus.
- Books borrowed by the distance learner will stay out on a longer loan period.
- Take into account the delivery time based on whether the students lives in the regional city, else where or overseas.
- Acquire additional copies of text and recommended reading resources to meet the distance learners demand
- Monitor the library interlibrary loan requests to identify titles that should be purchased for collection.
- Effective cooperation between librarians and academics responsible for the courses is crucial in the provision of appropriate materials.
- Digital collection development will soon become the most important services to distance learners, as it will save time and money spent in loaned books to distance learners as well as provide the information to a large number of students at the same time.

Electronic Resources

Electronic information resources are seen as important tools to facilitate access to information resources [4]. Electronic resources can replace many of the traditional materials that libraries have used. Electronic resources include:

- Electronic journals provided from publishers such as EBSCO Host, OCLC first search, LEXIS-NEXIS, MEDLINE, The basic Wilson abstracts.
- Electronic reserve course materials, which could be published on the library Web page, could be accessed easily and in available reading format.
- The library could create an online database in which the entire document delivered could be organized for the usage of other students with same need of information.
- Digital Books are also one of the most important electronic resources, however the growth of such digital books service is small regarding the rising needs of such services.

The role that digital Libraries play is an essential part in providing services to distance students in accessing electronic resources, whether these resources are hosted in publisher's servers or hosted locally on Libraries' servers.

Reciprocal Borrowing

The reciprocal borrowing scheme is based on the philosophy of sharing libraries' resources [4]. It enables students and staff of any university to borrow directly from a participating Library. This service will be a great help for distance students who may have an easy access to libraries in their living area, and overcome the time constraint of shipping books and materials for distance students from their academic university.

Interlibrary Loans

Another service for the off-campus students, provided by Libraries, is the interlibrary loan. If the item student requires is not in the library local collection the library arrange requests for interlibrary loan, the borrowing library can ship the material directly to distance students.

Reciprocal borrowing and interlibrary loans can work in conjunction with each other to provide distance students with their required materials in an effective and most efficient way. Libraries should seek for a big organization among each other to provide such services and succeed in the future distance-learning services.

Distance Learner Technical Support

While the on-campus students are provided technical support from different departments in the academic university, distance students struggle to find technical support on their places. Distance students need technical support in using the technology, which will allow them to use the provided distance services. They may experience problems in setting simple services, like Internet connections, or searching the library resources, or even need technical PC troubleshooting. As the library is the first point of contact for distance students, its ability for helping students to identify their technical problems and solve it become a new challenge

for distance library services. The following are some ideas of how libraries can provide such services:

- Provide students with detailed documents as to how they can setup their accounts for using the university technology facility from a distance.
- Create a web page as well as printed materials, which can be sent to students, which include the most FAQ about library services.
- Create a help desk web site by which distance students can easily submit their requests and find answers to their technical questions.
- The help desk facility becomes an important aspect in evaluating services provided by different kinds of enterprises. It helps them to know their weakness and strengths in providing their services, as well as keep clients in truly contact environment with their service providers. This helps relieve the pressure and fear of lack of communication due to the high cost of international calls or the time difference between countries.

Library Specialists' Role

Librarians are experts in the management and exploration of knowledge and information. In order to support distance learning, library specialists must become leaders in managing electronic Internet networked information. They must apply their wisdom and skills to this important knowledge bank by both helping users find what they need and ensuring open access to theses materials. They must serve as instructional consultants to course designers and teachers. When Library specialists and teachers decide to become involved, they can work as a tem to select, produce, and distribute the necessary instructional materials [8]. This cooperation will create distance courses, which develop problem solving and critical thinking skills among distance students.

Library specialists' role can be summarized as follows:

- Identify resources and their locations provide bibliographies [8].
- Provide multiple copies of materials in different formats; audio, video and Internet sources.
- Provides ways for students and faculties to interact, such ways include teleconferencing, video conferencing, and chat facilities.
- Collaborate with publishers to address copyright issues and partnerships.
- Address the needs and constraints of the different segments of distance learners.
- Provide and support help desk services to distance students.
- Provide instructional web facility like WEBCT for example

The Library will play a central role in the future development of the campus information environment. Rather than reacting to campus technology decision, library staff will be integrally involved in determining what the next innovations will be [10].

Library specialists require training in the communications technologies, they must be able to evaluate, create, select, manage and use technologies such as interactive television, computers, and Internet Web sites. It's their responsibilities to make it possible for the library to serve as a hub of an instructional and informational system. Library staff training is becoming an integral component of library distance services, more effective working relationships between librarians and technologists will improve their technological perception and their ability to support new technology facilities.

Guides to Remote Library services

Distance students must be made aware of the organization and delivery of off-campus library services. The guide should provide details about the wide range of services available and how to access them. This guide should be published both on the library Web page and by sending copies of this guide to students with their papers and course materials at the beginning of the semester. The guide should cover the following areas:

- The responsible staff for library services for distance students
- Library usage by distance students and type of services provided.
- The cost of library services if there are any additional costs.
- Request forms for those without electronic access to the library.
- Working hours for different support teams for each service.
- Expected time for special services to be completed, like document delivery, interlibrary loan, reference services and help desk support.

Conclusion

There is no doubt that library technology services will play an important role in supporting distance education. The number of distance learners is steadily increasing and therefore the demand for library services in order to help them finish their assignments is also growing. They expect not only to have the same library services available to on campus students, but also to have special library services like literature searches performed by library staff, and technical support in using technological tools. Libraries have to make an effort to identify off-campus users' needs and expectations. Libraries should develop their online services and publish their technology services on the Internet and via printed materials. Cooperation between libraries in different countries is very important aspects in providing distance learning support, it will facilitate reciprocal borrowing, Inter-library loan and document delivery services.

In my opinion libraries in universities, colleges and public libraries all over the world should be merged in an open global library community, which allow library services to become a continuous flow of information that can be accessed when convenient to the user from any chosen location. Libraries should start increasing their digital collections whether or not their organization are involved in distance learning programs. Even traditional library users find it very convenient to reach libraries and use information resources whenever they needed, on their own time

pace and their own pace.

The librarian's role will expand to provide learners and faculties the needed research materials and resources. They will develop a greater expertise in providing technical support in addition to search assistance. Library specialist should received adequate technical training in order to be able to support distance users.

Finally, I think that hiring a group of library specialists who have acquired high level IT skills; to be responsible for distance learning services will have great impact on the success of distance library services.

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IT and New Geographical Imaginings: A Roundtable Discussion by representatives of IGWS, FMRS & OAS *

Moderator: Dr. Cynthia Nelson
Department of Sociology, Anthropology,
Psychology & Egyptology
(IGWS)
Members: Dr. Anita Fabos, Department of Sociology, Anthropology, Psychology & Egyptology (FMRS); Dr. Ibrahim El Nur, Department of Political Science (OAS); Dr. Maggi Zanger, Department of Journalism & Mass Communication (IGWS); Ms. Elizabeth Bishop, IGWS fellow.

New information technologies are increasingly problematizing modernist geographical conceptions challenging scholars to rethink knowledge structures and their transmissions. This re-envisioning of the global south in the twenty first century is at the heart of the mandate of the three new interdisciplinary research initiatives at AUC. In this roundtable discussion 6 representatives of the three Centers will discuss the impact of new information technologies on their respective areas of research. ■

* Abstract only is published here

"It's on the Internet": Reality or Myth?

Panel Moderator: Ms. Martha S. Plettner
Director of Library Technology Services

Panel Memberss: Jayme Spencer - Coordinator of Information Literacy, Cheryl Rueby - Head of Cataloging, Huguette Yaghmour - Head of Automated Services, and Stephen Urgola - University Archivist

Abstract:

The rapid expansion of readily accessible information on the Internet has led much of the general public, especially students, to believe that anything they want may be found online. Librarians and related professionals are challenged to educate the user on how to employ effective strategies for using the Internet as an efficient tool for gaining access to the information they need as well as critically evaluating the information retrieved. The seemingly infinite quantity of information found online has persuaded many to assume that the Internet is the final rather than initial step in the search process. Resources discovered online often lead to further search processes, which take the user to the relevant information available in the traditional library and archival setting. In discussing the role of the Internet as a first step in the search for information, this panel will provide a forum designed to educate the user to the melding of the Internet with traditional library and archival resources, with the aim of providing a more complete and extensive strategy for accessing quality research information.

Each of the panel presentations relied heavily on graphics. They have been modified for these proceedings

Welcome —— Internet Enthusiasts and Luddites alike!

Martha Plettner, Moderator

Today we are offering you a forum for the discussion regarding the Internet – We will present its potential benefits as well as offering some cautions in its use! The Internet is a global network of networks enabling computers to transparently communicate and share services throughout most of the world. The World-Wide Web or the network of Hypertext pages using the Hypertext transfer protocol became a part of the Internet in 1992.

On the Net, the connections are cables between computers; on the Web, connections are hypertext links. The Web exists because of programs which communicate between computers on the Net. The Web could not exist without the Net. The Web made the Net useful because people were interested in enhanced information—especially that in graphic format. That and the formation of websites which are easily shared has permitted the current revolution of information sharing.

Let's now discuss some issues resulting from this explosion in the availability of information because of these advances. There will be time after all of the

panelist's presentations for questions—so please hold your questions until they have all had their say.

Database or WWW?
Identifying the Appropriate Resources and Tools
Presented by Jayme Spencer

You will notice that I have entitled my portion of this panel: Database or WWW? The Internet is broader than the WWW and it is the WWW we all mean when we remark "It's on the Internet". I'll skip the history lesson and the semantic point and concede that when most people speak of the Internet, they really mean the WWW. But what do I mean when I draw a distinction between a database and a site on the WWW?

The definitions from Merriam-Webster's Collegiate Dictionary are enlightening. The **World Wide Web** is a noun that is dated in this dictionary as beginning to appear in 1992. It is defined as: a part of the Internet designed to allow easier navigation of the network through the use of graphical user interfaces and hypertext links between different addresses — called also Web. The noun **database** dates from circa 1962 and is defined as:

A usually large collection of data organized especially for rapid search and retrieval (as by a computer)

Working with students to Identify the Appropriate Resources and Tools

Given these definitions, why is it important to choose between these resources? Below is the chart I use frequently in the Information Literacy session on searching for journal articles.

What	Why	How	Where
Books			
Scholarly articles			
Magazine articles			
Newspaper articles			
WWW			

I group the students in twos or threes and ask them to fill out the chart. After a few minutes, several students will timidly raise their heads and remark that all the whys is the same answer, and all the hows and wheres are too. Then, we talk about that answer: "the professor said I had to have 5 sources, either books or scholarly articles " Once I get them to thinking about the coverage or the publication date of a scholarly article, a book and a popular article they begin to see differences and are usually able to fill out the chart.

What	Why	How	Where
Scholarly articles		• Index • Database	• In the Library • Internet

Let's concentrate on this row of the chart. After answering the why, I get them to think about the how and the where – of course, by now, they know that a single answer is not right. Most have never heard of periodical indexes. They do know the word database but are not sure what one does with it. Then I show them a print index and explain how it works and contrast that with a quick demonstration of *Academic Search Elite* from our list of online periodical databases. I make the point that these two resources are serving the same function – guides to filtered material – and can be found either in the library or online via the Internet (not ON the Internet).

Identifying the Appropriate Resources and Tools - Index (graphic)

Most indexes provide a structured access to filtered material through author, title or subject approaches. Asking a key question of "Who cares about my topic enough to write about it?" can help a student select the appropriate index – Sociological Abstracts, Business Index, Education Index, etc.

Identifying the Appropriate Resources and Tools – Database (graphic)

A database functions like the printed index but with the added luxury of random access. This free-text searching across fields and texts has been a great boon to research. The computer's ability to handle huge amounts of data has allowed multi-disciplined databases to be constructed. There are specialized databases as well. From the list of Online Periodical Databases available through AUC Library subscriptions: *Academic Search Elite* is a comprehensive, multi-disciplinary database whereas *ACM Digital Library* is primarily used in the fields of computing and technology.

A major stumbling block for many students who try to use a database is the restrictive interface (restrictive only in the minds of the student). The search box requires you to **compose** a search, not just type in a sentence or query. You have to know how to select fields and / or make Boolean combinations. The databases are unforgiving; misspell a word and it is searched as typed not corrected as it is in many databases. Unless given guidance, many students will not get the best results

from using a database because they have not properly structured the search.

Identifying the Appropriate Resources and Tools – WWW (graphic)

On the other hand, a user of the WWW will find 1000's of possible sources of information even if the student misspells words or phrases the search poorly. It is transparently easy to use although **NOT** easy to use well. The random access here is not a limited (albeit huge) database but hundreds of thousands of websites and millions of web pages. The amount of information out there makes the mind reel. You never find citations only – it's always full text and right there ready to be printed out. Never mind the quality, think of the convenience! For those of us who teach information literacy the question of evaluation of this unfiltered information is crucial.

There are ways to tame the WWW – an advanced *google.com* (or any general search engine) search can restrict language, date, format and domain thus ensuring a more focused search. Evaluation can be taught – critical thinking must be applied to WWW as well as to books and other printed articles.

Identifying the Appropriate Resources and Tools – Database or WWW? (graphic)

So which one to choose? I'll admit that if I need simple information or the absolute latest word on my topic, I turn to a search engine. But I know the difference between doing that and researching comprehensively. I also know how to evaluate whatever I find on the WWW. That's why we need to teach information literacy and not just search techniques. I believe that in the next few years, commercial databases will restructure their interfaces and become more like search engines on the WWW. The lines now separating academic and popular material will blur even more making our job of teaching researchers how to identify, use and evaluate the appropriate resources and tools even more important.

"It's on the Internet": Evaluation of Internet Information

Presented by Cheryl Rueby

Evaluate the Quality (graphic)

Evaluating the quality of the information one has found when conducting research, whether located on a Web site such as the article shown on this slide or an article within the pages of a scholarly journal, is one of primary importance. The Internet provides an overwhelming amount of information on many topics from many sources: governments, international or national organizations, or commercial enterprises.

Determining the quality from the quantity can be a daunting task without the aid of guidelines or general rules for evaluation.

There are five basic areas that can be looked at critically when evaluating the information retrieved. They are: (1) the source, or authority, responsible for the information, (2) the accuracy of the data provided, (3) the coverage or scope of the

data, (4) the objectivity, and (5) the currency or timeliness of the information.

The article presented in the slide was found on the Web and would, at first glance, appear to be an informative source for those involved in research concerning Aids and its impact on women.

Consider the Source / Author (graphic)

Looking at the five areas used for critical evaluation, we begin with the source or author of the article. The source or author can be an individual, a corporation, an international or national organization or a government. Generally, information provided by a government or an institution such as a university can be assumed to be accurate. However, it is best to always identify the source by looking up the institution or individual responsible.

Can they be easily identified or is there insufficient information? Most universities have established Web sites and their faculty are readily accessible through them In addition, major reference sources also list universities and colleges worldwide.

In the slide, Dr. Juatta Lyon Fueul is given as the author of the "True but little known facts about women and Aids". The university (University of Santa Anita) listed looks legitimate but is not. Verifying the university by searching for it on the Web or looking it up in various reference sources has shown it does not exist. Since the university cannot be located it is possible to assume that the author is fictitious as well.

Check the Accuracy (graphic)

Always check the research methods by comparing the data presented with other sources. Is it noted that the information has been peer-reviewed, edited and that all facts have been checked? Are there typographical errors, meaningless phrases or incoherent information? Always check one source against another and look for supportive evidence. In addition, a good measure of common sense can be applied to some information. (example from slide)

Evaluate the coverage (graphic)

Comprehensive coverage would indicate the author's knowledge of the subject matter. Documentation provided should also show works cited, links to other relevant Web sites and information about research and researchers in the subject area. The research methods should be documented and verifiable. For example, are the journals or Web sites referenced peer-reviewed or indexed in major indexes/ databases? Are the authors cited in other relevant scholarly works, are the considered to be experts in the field, and are the Web sites truly relevant or simply dead links?

"1.Atlantic Center of Disease Control. (March 1999). Blameless driving records and satisfactory performance: a correlation in female hospital aides? ACDC Special report."

(graphic)

At first glance it would be very easy to think that the first reference given here refers to the CDC or Center for Disease Control in Atlanta since the Atlantic Center for Disease Control sounds very similar.

Assessing objectivity (graphic)

Objectivity is perhaps one of the most difficult areas to assess. All information contains some bias. You will need to ascertain if both sides of an issue is represented fairly. For example, are the author, institution, and/or publisher using the information to influence the reader and serve their own interests? This is often the case when the site is a for-profit one and the institution wants to sell you something. It could be politically motivated as well and therefore designed to encourage you to support an idea or belief. Examine the assumptions made and look closely at all the evidence presented. Try to determine if the information is presented as objectively as possible.

Determining Currency (graphic)

Information, which is current and updated regularly, is usually the most recent information available. Timeliness becomes important when looking for current trends or the most recent data when doing research. Check to see when the information was last updated. This should be clearly presented. Currency is not an issue for primary and seminal works in a subject are.

The evaluation process following these simple guidelines will assure you that the information retrieved is the information you seek. Many of you probably already exercise critical evaluation techniques when conducting your research. Whether done intentionally or as second nature the process is a very necessary one when you seek to retrieve quality rather than quantity.

The example used throughout this portion of the panel was taken from:

Fueul, J.L. True but Little Known Facts about Women and Aids" http://147.129.1.10/library/research/AIDSFACTS.htm. Accessed March 2002.

Libraries and Searching Strategies
Huguette Yaghmour

Good searching strategies help you to save time by:

- Directing your search to the kind of information you are seeking.
- Limiting your search to the time period you are interested in.

It helps you to focus on the materials you need; instead of being lost among a great number or resources, which include helpful material mixed with others that are not relevant to your topic.

AUC Library New Millennium Keyword Advanced Search Interface

The AUC library new millennium keyword advanced searching which will be unveiled soon, allows the library's patron to perform searches of the database using the familiar Alta Vista syntax, which is offered by many search sites on the World Wide Web.

It also adds the ability to pre-limit the search by many different ways:

- By Language: You can choose the English language if you want materials written only in English. On the other hand, you can search only materials written in Arabic.
- By Material Type: That is: printed materials, videos, microfilms or microfiche and so on.
- By Location: that is where the material can be found. Is it or the main library? Or is it in another place completely? The material you are looking for can easily be located in the main library, main library but in the periodical area, main library on the reserve area, or on the other hand, it could be located completely in a different place like the RBSCL or even the SRC
- Sort your Search: It also offers you the possibility to sort your result set in reverse order by publication date or in alphabetical order.

Finally, yet importantly, there is another possibility for pre-limiting your search by choosing a certain publisher as well as a range of publication years. It can be after a certain year, before another one or even between two dates.

As an example: by searching for "Child labor Egypt" using the English language, printed material excluding microforms, videos, etc located only in the Main Library sorted by date and published after 1950 the result will be as follows: only one record found, a book written in English shelved in the main Library and published after 1950. On the other hand, if the same search "Child labor Egypt" is performed without using any pre-limiter at all that is records can contain materials written in any language, under any type, can be found at any location and without limiting the publication date we end up with 19 records. Some of these records are written in Arabic others are microform materials, etc.

Millennium Searching Strategies

The new Millennium Keyword Advanced Searching has the following advantages: it uses the "*Adjacency*" that is, it will retrieve any record in which the entered terms appear next to one another in the same field and in the order entered, to offer the precise and relevant search results set. It also uses the "*Truncation*" possibility by using either a question mark "?", which is a wild card for only one character, an asterisk "*", which matches up to five non-space characters and two asterisks "**", which matches any number of non-space characters. Operators are the Boolean search syntax. With the operator *and*: the two words need not appear in the same field. *Proximity:* uses the words like near or within. *Near*: will only retrieve records that contain both words within ten words of one another in the same field. If these words occur further apart in the same field or they appear in separate fields in a given record, then that record would not be retrieved. *Within*: is similar to *near* but allows the user to specify the maximum number of words that may appear between the specified words.

Archives and Digitization
Stephen Urgola

Archives: So Much Material - But Only Some of it Online (graphic)

When I tell someone that I'm an archivist, and that I work with original historical documents, they often ask me "Are you putting everything on the World Wide Web?" The answer I give is that there is far too much material in even a small archives to transform it all into digitized images. But I let them know that they are correct in recognizing that the web has become a useful tool for giving researchers access to archival materials.

Creating web-based digital images of selected archival items is one important way of providing access to users, especially those at a distance from a particular archives. But what I'll discuss first is how the web has made it easier for the majority of archival users, those who will do their research within the walls of an archives, to find the material they need.

Multiple-Archive Catalogs (graphic)

The web has given archivists the ability to increase the availability of informa-

tion about their collections. The usefulness of the descriptive tools that archives have traditionally used has been extended by applying web technology to them. Web-based catalogs offer brief descriptions of the collections held at multiple archival repositories. Collection descriptions submitted by archives from throughout a region or country are available in these kind of online catalogs, such as the British "Access to Archives" database. This makes it easy for scholars and students during the early stages of their research, when they are determining which archives contain the historical records they need to examine.

Single-Institution Catalogs (graphic)

Individual archives have also created web-based catalogs of their holdings, like the online catalog of the U.S. National Archives. These permit users to discover what kind of materials an archives has available for researchers, without having to first make a visit in person. Search portals like these give users a sophisticated tool for investigating an archives' holdings, allowing searches by date or format, such as photographs.

Detailed Finding Aids Online (graphic)

Many archives now post on their web sites even further detailed finding aids to their collections. These tools, usually in the form of an index, give detailed information about the documents that make up an archival collection, listing the items contained in each folder. This allows users, before even visiting the archives, to determine the portions of a collection they want to use, an often time-consuming task. In addition, researchers located far from the archives can potentially make a detailed request for selected materials to be copied and delivered by mail, or even scanned and sent by email.

Exhibitions and Collections of Archival Images (graphic)

When most people think of how the World Wide Web can provide access to archival sources, they think of digital images. Many archives do place on their web sites digitized images of items they possess. This typically takes the form of an online exhibition. These exhibitions are the online equivalent of the kind that an archives would mount on its premises, and in fact often accompanies an actual exhibition currently on display at the archives. Online exhibitions can provide web viewers with a virtual tour of an archives' highlights, or give a taste of the kind of materials it collects. While such web exhibitions are useful in these ways, however, they may be of limited value for research.

Frequently Used Items Online (graphic)

More useful are digital images of items placed online due to their popularity with researchers. An example of this kind of frequently used document is the original list of the survivors of the Titanic, which is available on the web site of the U.S. National Archives. Placing such a document online increases access for researchers, especially those at a distance from the archives. This also reduces wear

on the item that would be produced by frequent handling by researchers, who otherwise would have to use the document in person.

Ease of Use and Safety for Documents (graphic)

This preservation function is another advantage of mounting digitized archival images on the web. A document like a fragile, seventh-century papyrus couldn't withstand handling by researchers, so a web image permits access without causing further damage. For a delicate item like this, digitizing also makes study easier for a researcher, who can zoom in and examine it, for example. Only a small percentage of the vast quantities archival items available can be digitized, however, so this technique is not an answer to the problem of preserving most documents.

Full Collections Online (graphic)

In some cases, archives digitize entire collections of documents and post the images on the World Wide Web. The Ashmolean museum in Britain, for example, has digitized the records of Howard Carter's Tutankahamun expedition. This allows the kind of in-depth research usually possible only by visiting an archives in person. While this kind of project has been done by just a few archives, it does allow distant researchers to examine a collection much like they would if they were physically at the archives.

Archivists can't digitize everything in their collections and post it all to the World Wide Web. But they can use the web to increase access for users, including those located far from an archives. The focused application of digitized images and the availability of web-based description tools are the chief ways in which archivists can accomplish this. ■

Role of Information Technology in Research Promotion Within the Construction Field: A Case Study

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Abstract:

Information technology has with no doubt its strong impact on almost all fields of our lives. Such an impact has extended well beyond technical and financial domains to influence ethical, social and behavioral aspects of people all over the world. Naturally, research works have truly become domains that are heavily impacted by the ongoing revolution of this technology. This impact has both a quantitative and qualitative nature in the sense that both the research interests with their conjugate fund allocation as well as the quality and accuracy of research have been directly influenced by information technology.

This paper provides an overview of the role played by information technology in the promotion of research work; particularly in the construction field. This paper covers the clusters of active research in construction field in Egypt and worldwide. A case study of a joint research involving a US counterpart together with the author is presented. The role of IT throughout the various stages and progress of the research is highlighted and discussed. A comparison is held between selected ongoing research works and previous works that were conducted few years ago to further illustrate the role of technology.

The study reveals competitive and indispensable advantages introduced by information technology in approaching and preparing research proposals, acquiring relevant data, conducting experimental work, synchronizing work and comparing the results, managing grant funds and finally documenting and exposing the findings. The study pinpoints the concept of multidiscipline research and how it is being strengthened with available technology. Yet, some possible technology-induced precautions are reported as viewed by study team, which need to be considered in research works of similar nature.

Keywords: (Information Technology, Research, Construction, Multidiscipline)

I. Introduction:

It is well known that construction is an old Egyptian industry that dates back to more than 5000 years ago. Over the years, construction has grown to comprise projects of various nature, innovative materials and modern techniques. In fact, buildings technology have moved from challengingly strong rocks to lighter yet strong composites among many other innovations.

Needless to say, construction industry is one of the pillars of the Egyptian economy placing a share of about 7% of the gross national product (GNP) in Egypt (1,2). On the other hand, construction engulfs about 9 to 11% of the total Egyptian workforce, which is characterized by three main criteria. First, the number of workers is significantly fluctuating and can be thought of as a somewhat "seasonal" industry with spring and summers witnessing higher employment yield.

Second, much of the basic labor is from illiterate or low-level of education. Thirdly, for one reason or another, construction is a male-dominated field with no more than 1% women employment level. In terms of fields, construction covers more than twenty-one sub activities of works which are by far interrelated.

Research is with no doubt the locomotive for development and prosperity. Traditionally, research in the construction area has been going in the domain of materials characteristics and development, functional and architectural design, transportation planning and implementation, the field of geotechnical, hydraulic structures and flow. Over the past two decades, construction projects became increasingly complex and diverse. As a result, research has expanded to include other disciplines such as project planning and project management, legal and legislative aspects, seismic design, environment and environmental impact, information technology and artificial intelligence.

In terms of support and capacity building, it is the construction industry, and not the government entities, that take the lead in research works in the modern world. This can be attributed to a relatively direct and quick return for research in terms of safety, performance, economy and environment in one hand and providing a competitive edge when "bedding" for projects on the other to involved companies. For instance, it is estimated that 65 to 75% of research funds and personnel are borne by the industry such as cement and steel companies, large design firms, construction equipment and facilities firms, to name but a few. In terms of performance, it is estimated that universities carry out no more than 15% of the total volume or research in the USA as an example.

II. Information Technology in Egyptian Construction:

Similar to almost all domains of our contemporary life, information technology (IT), or in other words information and communication technology (ICT), has projected a strong impact on the construction industry as well. When it comes to Egypt and according to a "small-scale" study carried out by the author, the following are some initial indicators for impact of ITC on the construction industry (1):

- Providing a large array of software that often makes work, including research, faster, more accurate and less costly.
- Facilitating the access to various types of needed information
- Strengthening research and development of deliverables
- Enhancing financial capacities of institutes through enhancing bedding, cost-estimates, profit/loss analysis and finance control
- Provision of strong design tools that can enable sophisticated calculations and analysis in remarkably short time intervals.
- Empowering the capacity for production of drawings, illustrations and animation of design components that are highly needed in some design stages which can facilitate visualization to client as well
- Enabling a vital, yet low-cost, communication channels through e-mail, networks and other forms of communication. This particularly supports projects in remote areas of firms with various branches that often require uniformity and coordination efforts.

However, it is worth noting that the beneficiaries of ICT-induced privileges in Egypt are mainly confined to medium and large construction firms while most of small firms are still within the barriers of traditional techniques with some limited exposure to technology aspects in some equipment and applications.

Unlike developed countries, the majority of construction research is carried out by universities and not through the construction firms. However, a small-scale questionnaire performed by the author which covered researchers; most of which are university professor, shows a strong indication that ICT is introducing a significant change to the research image in Egypt. Figure 1 provides some indications of the ongoing changes as reflected by the questionnaire through comparing various aspects within only a five-year time span. For example, there has been a remarkable increase in the use of e-mail, web sites and sophisticated specialized software, electronic registration for overseas conference over the past five years. Perhaps more importantly, there has been a true increase in performing inter-disciplinary research within that time span. This can be attributed, at least partially, to ICT and the existing facility of communication and networking which has a pronounced effect on research development and progress.

III. Case Study: Research in Recycled Concrete:

There is an ongoing research tackling the performance of recycled concrete which is jointly conducted between the US and Egypt. This research has two counterparts, the University of Kansas, USA and the American University in Cairo, Egypt. This grant for this research was submitted as a proposal and was accepted for funding by the US-Egypt joint fund program in the February 2000. The research has a total fund of $ 50 000 and is planned to terminate in August 2002 (total of 30 months).

Portland cement concrete is a major construction material that is composed of Portland cement, water, fine aggregates (like sand) and coarse aggregates (like gravel). When mixed together, the composite hardens yielding a strong material that is nowadays widely used for construction purposes and is often reinforced with steel. However, since natural aggregates resources are depleting in one hand and the demolished or rejected concrete represent a heavy burden as wastes, there has been an ongoing trend of recycling "old" concrete to be used as recycled materials in "new" concretes. The resulting new composite can yield good results when compared with conventional concrete. Figure 2 shows a sample result for the compressive strength of recycled concrete compared to conventional one (after 3). In fact, recycled concrete can surpass conventional concrete in some properties such insulation and fire resistance. Yet, there is an agreement that a need does exist for further information related to long term properties of recycled concrete such as durability and behavior with reinforced with steel (4, 5, 6, 7).

There are two main types of recycled concrete. In the first one, the coarse aggregates (such as gravel) is replaced by pieces of recycled concrete while a natural (conventional) aggregate is used as fine aggregates, like sand. In the second types, both aggregates types are replaced by recycled materials. In addition, there are two main sources for acquiring waste concrete for recycling. The first one is de-

molished buildings, pavement, blocks, etc. while the second is rejected/returned concrete that is not used or poured. In both cases, the handling of the waste and the use of landfills represent a real difficulty and burden for owners and contractors.

The two principal investigators from both universities have prepared the work plan so as the durability aspects is mainly tackled in the American University in Cairo while the fracture behavior and bond with steel is mainly tackled in the University of Kansas. Yet, there is a common area of basic testing and criteria that is conducted in both universities to examine trends and compare results. To avoid going into unnecessary technical details that may not be needed for the purpose of this paper, the reader is referred to the research proposal and the two progress reports (4. 5, 6).

IV. Impact of ICT on Current Study:

There is no doubt that this form of cooperation has been –by far- facilitated through many ICT aspects. This can be explained in the light of the following points which do extend beyond the investigation conducted by the author to other investigations as well:

1. To begin with, the information regarding the proposal and funds itself was brought to the attention of the author through electronic e-mail. Otherwise, the authors would not have known about the grant opportunity.
2. The preparation of the proposal itself took place while each of the two principal investigators (PI's) were in a two different continents; yet exchanging at least 20 electronic mail messages (e-mail) over few weeks time span to ultimately come up with one sound proposal.
3. During the course of research, ICT made it possible to establish an active communication link for the exchange of data between the two research teams.
4. By default, the integration of research between the two institutes and through two teams made it possible to share resources and carry out some tests in one place while analysis of results is conducted in the other and often in parallel timing.
5. As expected, the ICT links also with private sectors and agencies like State Departments of Transportation (DOT's) eased the input of various parties and allowed the operation or at least the input of multi-disciplines in the research.
6. The two teams have made real good use of available data on Web Sites and the findings of the research is also intended to be published on the Web which was part of the research proposal agreement.
7. Monitoring and Evaluation (M&E) schemes represent an indispensable corner stone of any successful scientific investigation. Such a scheme was effectively established through continuous communication between the two authors.
8. There was frequent deliberation on several technical and financial issues relevant to research which allowed a relatively easy budget amendments when needed.
9. To make the best use of the financial grant, the two teams had often the

option of conducting some tests in one of the two locations where materials costs, time frame or labor is of some relative advantages. This has indeed some cost reduction effect if compared with a rigid plan of work conducted at each of the two locations.

However, there were also some drawbacks experienced in this regard that need to be considered:

1. Although e-mails and other forms of distant communication has secured very effective communications, there were number of issues that could only be resolved through physical contact when one of the two PI's meets with the other teams.
2. It was experienced in few occasions that some of the data in electronic files exchanged between the two teams could not be handled due to the absence of an updated software version or non-conformity with a hardware with the receiving party.
3. It needs to be considered that in phases of work that required continuous coordination, barriers such as time difference, days off and weekends that varies at both ends represent a small –yet significant- loss of "contact time".

V. Concluding Remarks:

The previous discussion and the case study briefly presented herein reveal that ICT has a strong impact on research work. When taking this argument towards the general level one can state the ICT when properly utilized and implemented can strengthen the following aspects:

- Easier and better access to research data
- Better access to research funds and grants
- Formation of research teams with less efforts and allowing multi-discipline schemes
- Effective communication and work monitoring among research parties
- Resource-sharing between various research teams
- Cost-effectiveness and management of research grants

On the other hand, some challenges need to be considered although some of which were not at all encountered by the research team herein. This includes:

- Enforcement of the legislative and ethical issues associated with ICT
- Although ICT can encourage distant research, yet physical contact and discussions is indispensable for some issues
- In quality research, there is a need for continuous update of software and hardware in the area of ICT which has as well its cost implications
- The human resource is a governing factor in almost all ICT matters. Lack of skills and unfamiliarity with software, hardware of sophisticated equipment can slow down research or any other activity
- It is occasionally encountered that some codes of practice or units of measurement need adjustment between various distant research teams. However, implications of findings need to compared to abiding codes in con-

struction project regions

- Role of private sector and industry in general in research works is small. Promotion can take place through a cost/benefit approach.

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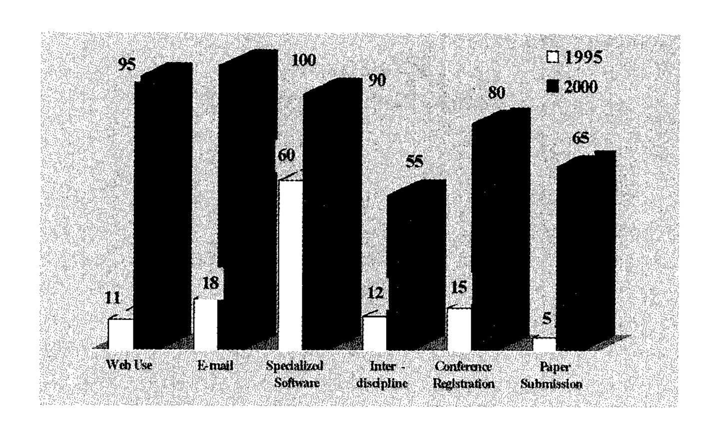


Figure 1- Percent of Responses Regarding ICT-Related Research Items

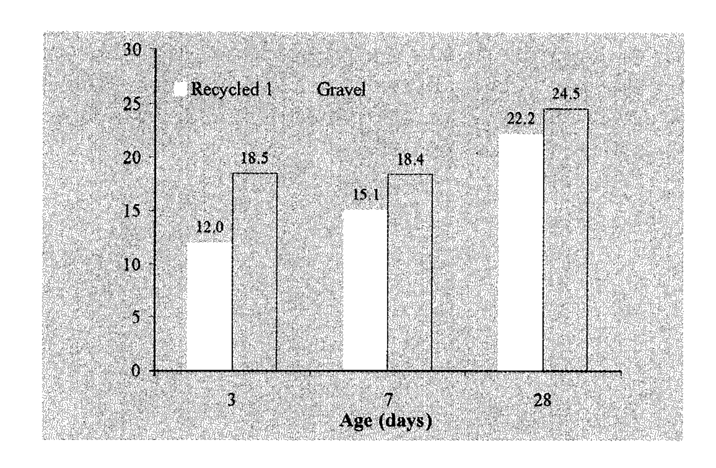


Figure 2- Sample Results for the Strength of Recycled and Conventional

The Role of IT in Decision Making in AUC *

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In my paper, I will focus on the practical point of view. Actually I designed a data base project using both access and excel programs to have a complete set of data that helps administrators in Sociology-Anthropology-Psychology-Egyptology (SAPE) department to perform their jobs properly and to assist the chairman of the department in his decision making. In my project, I collected all the courses offered in SAPE department from the years 1989 – 2001 in order to know the workload in each unit (sociology for example) every year. Also the database will help me to know the high and low enrollment courses offered during this mentioned period. My project is divided into the following parts: 1) introduction, 2) list of all courses offered from 1989-2001, 3) a comparison between no. of students registered in SAPE courses every year, 4) a comparison of sections and enrollment in introductory courses, 5) list of high enrollment courses, 6) list of low enrollment courses, and 7) conclusion. The importance of this project is that it helps the SAPE dept to have a pre-plan for the next five years for example when we compare the enrollment through the diagrams (done by excel). This will help in deciding how many sections we need to open in a specific course and how many teachers we need to hire in the department. This is a simple idea about my project that I would like every one to see in order to apply the idea in every department and to have a pre-plan and a clear picture about the estimated number of students after 5 years when we move to the new campus. ■

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* Abstract only is published here

An Overview of E-Commerce in Developing Countries with a Special Focus on Egypt

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Abstract

E-commerce, nowadays, is dominating the world; yet, it is not widely used in developing countries. Such countries, still, are not aware of the importance of e-commerce. However, industrialized nations are trying to reach a perfection point in utilizing such a phenomenon to benefit from its pros and avoid its cons.

Despite the fact that some developing countries, such as United Arab Emirates, Qatar, Bahrain, Kuwait, Lebanon, and Oman, are on their way to fully rely on e-commerce, a lot of other countries are faced with barriers that hinder them from its practicing. The e-commerce concept is unclear to governments, businesses, and consumers of those nations. They do not interpret the rational of such a phenomenon. The lack of efficient technical, financial and managerial support deter the progress in the field of e-commerce. Why are developing countries lagging behind? And how can they improve? The purpose of the study is to identify the problems facing those countries, with a special focus on Egypt. It will also provide problem-solving techniques and advice to their governments, businesses and consumers.

In this paper we will discuss the significance of e-commerce application in developing countries, the role of developed and developing countries in reducing the digital divide illustrating some examples of the U.S. programs in Egypt and other developing countries as well. Different e-commerce barriers in developing countries, and the role of private sector and senior management in accomplishing the application of e-commerce will also be presented. Finally, we will illustrate some personal interviews with Egyptians owning or managing different commercial activities, who are fully or partially relying on network trading in their businesses.

Introduction

In general, the emergence of the Internet, in 1969, was not accompanied by electronic commerce. However, later on, businessmen's needs drove up the demand for conducting commercial uses through the Internet. Thus, the Internet is currently regarded as "a global information repository using a variety of push and pull technologies to reach all Internet users, globally"(Graig Fellenstein and Ron Wood, 7).

E-commerce basically refers to "electronic trading over networks." The widespread use of the Internet made the term now "often means online shopping"(www.ise.org.eg). E-commerce is the fastest growing segment of the Internet. "Internet commerce" helps in integrating all elements of a commercial transaction, "unconstrained" with time or space, at relatively low cost (Magda Ismail, Electronic Commerce and Small, Medium, and Micro Enterprises).

There are two types of e-commerce, direct and indirect. Direct e-commerce is trading of "immaterial" products over the Internet. While, receiving goods through ports, and other traditional means of delivery, is called indirect e-commerce (Ismail, Comparative Analysis of Major E-commerce Initiatives).

Nevertheless, we should distinguish between e-commerce and e-business. On one hand, e-commerce is defined as "an evolving utility of packaged software applications that link multiple enterprises, and consumers, for the purpose of conducting electronic business (presales, sales and postsales)" (Fellenstein and Wood, 23). On the other hand, e-business is defined as the "use of electronically enabled communication networks that allow business enterprises to transmit and receive information"(Fellenstein and Wood, 35).

Regardless of its definition, e-commerce aims at "optimizing" the relationship between businesses and consumers and businesses among themselves. This optimization would be achieved if both businesses and consumers were capable of using information technologies (Fellenstein and Wood, 23).

In Egypt, for example, only a handful of companies are providing e-commerce services and support, and the number of those who actually implement the solutions are negligible. Egypt "is very much a fledgling market," as quoted from Business Monthly Magazine (Hend El Sineity, 1).

The Advantages of Applying E-Commerce in Developing Countries

The application of e-commerce has various advantages, particularly in developing countries. It helps in expanding businesses, creating jobs, and increasing business-to-business and business to consumer applications. Thus, providing better information, and more choices with both higher quality and lower prices (Alan Larson, 1).

Other EC advantages concern small and medium enterprises (SMEs), especially in developing countries. Online trading enhances SMEs selling their products to a worldwide market, and helping them finding customers and partners all over the world. It also helps them in reducing the cycle time, offering values to customers (Ismail, Process Where to Finish?), accessing new markets, reducing cost of doing business and increasing company profits. Moreover, it helps them in gathering and spreading information on an "international scale"(Ismail, Electronic Commerce and Small, Medium, and Micro Enterprises).

Some Examples of Barriers Facing the E-commerce Application

Nevertheless, the international "digital divide" between industrialized and developing countries is growing. More than 300 million people access the Internet, half of which are in North America. In the Middle East, slightly more than one

million access the net (Larson, 2), of which 50% are from Israel as Nagla Rizk mentioned in her paper. Notably, the number of Internet users in New York is more than those in the continent of Africa (Larson, 2). Thus, "economic growth is at risk unless these countries take prompt action," as McConnell, a former White House official said (Mitch Betts, 1).

There are various hindrances to the development of e-commerce in Egypt, and other developing countries as well. Some of which are: lack of awareness, education, skilled human resources, uncertainty about e-commerce benefits to the business, lack of suitable products and integrated systems for using the Internet, set-up and banking costs. Lacking a sound legal framework is another barrier facing e-business in Egypt, and SMEs in particular (Ismail, Electronic Commerce and Small, Medium, and Micro Enterprises).

Moreover, online payment is a crucial element that hinders the development of e-commerce in Egypt. A significant barrier of e-commerce is fraud. Sometimes an un-doubtful purchasing agent creates false web-based supplier and use false transactions to steal the company. Mohamed Shoeib, owner of www.bostany.com, said that there are two ways for paying an online order, and "selecting a payment method depends on whether the customer is inside or outside Egypt." For instance, if a customer outside Egypt fills in an online order, he has to pay through his credit card; however, if someone inside Egypt orders a product online, he has to pay cash on delivery. Nevertheless, the risk of online payment is that if someone uses a stolen credit card, we face the so-called "charge back disputes," he added. The result of such disputes is that the shop should repay the money back to the bank although it did not actually receive any, as Mohamed Fayed, Executive Manager of Shop@Egypt store said. "Greedy and dishonest customers," who either fill in junk forms or claim that they did not receive the ordered product, cause us some troubles although they only constitute 1% of our customers, Shoeib added. "Those type of customers are blacklisted and we never deal with them again," he said. Nevertheless, there are other companies which avoid online payment although using online trading. For example, Al Shams Agro-Group, an Egyptian company which specializes in online agricultural exports, only accepts transfer payment or Letter of Credit (LC). "We do not accept credit card payments," said Zakareya Shams, Owner and Chairman of the company.

Shipping from Egypt also involves several customs forms and high postage, which increases the cost of small-shipped items. As a result, some companies ship their items from foreign warehouses (El Sineity, 2). "We have 10 affiliates in different countries" like, the Unites States, Canada, Dubai, and Italy, Shoeib said. When somebody fills in an online form, we ship the order from the nearest affiliate to the customer, he added. Moreover, it is worth mentioning that an e-commerce transaction is also accompanied by the risk of information security breaches to a company, whether from inside or outside.

Although free access of the Internet is available to every Egyptian resident, the lack of awareness at the consumer level is a significant barrier to e-commerce in Egypt. For instance, buying through the Internet is not widely trusted or understood among Egyptian consumers. They like to "see, touch and try out merchan-

dise before purchasing" (El Sineity, 2). Despite the fact that now a higher number of people can serf the net, "we do not expect a higher number of online orders as such before three or four years," as Ashraf Serry, Financial Manager of Lotfy Group stated. He explained that they only receive less than 0.5% of their orders online which he describes as "very primitive." His explanation for such an insignificant figure is that people are not aware that the well-known Lotfy Group shops now have their own site on the web. Serry added that Lotfy Group has its own site on the web because they know that "the Internet is the future, but yet it is not a successful experience."

Not only do consumers lack awareness, but also do the executive levels. Since decision-makers, government and private sectors, are not computer literate, they do not "actively promote e-commerce" (El Sineity, 2).

Reducing the Digital Divide in Developing Countries

In order to solve the problems that accompany online trading, a lot of efforts should be exerted. However, "no single government, company, organization, or individual can effectively satisfy all of the developing world's needs for policy, regulatory, and technical assistance in the information technology field" (Larson, 6). Accordingly, developed countries should play an effective role in helping developing ones in sharing the benefits of the global information economy. As President Bill Clinton said, "the Internet will do as much as anything else to reduce income inequality" between industrial and developing countries (Larson, 1). There are some programs which the U.S. government has initiated in order to help developing countries to utilize the opportunities provided by the global information technology. These programs would, hopefully, "help the revolution technology to take root in developing countries". For instance, the U.S. embassy is running workshops, in Egypt, on processing online payments to help expand the use of e-commerce (Larson, 3). Furthermore, there are several initiatives, such as the Internet for Economic Development (IED), the majority of which are funded by the U.S. Agency for International Development (USAID), issued by the U.S. government to encourage the Internet and e-commerce in developing countries (Larson, 4). For instance, in the fiscal year 1998-1999, the USAID dedicated roughly $12 million aiming at accomplishing Internet development objectives in those countries. Of which, $2.2 million were for establishing an, information technology, economic growth program in Egypt (Larson, 4). Additionally, a United Nations Development Program (UNDP) is established in partnership with governmental entities, such as the Governorate of Sharkia, Sharkia Chamber of Commerce, Information Decision and Support Center and others, to provide "a community center" for technology access and support (Ismail, Electronic Commerce and Small, Medium, and Micro Enterprises). Community Center Projects also aim at providing SMEs with business-to-business statistics and information (Ismail, Electronic Commerce and Small, Medium, and Micro Enterprises). Thus, global integration, through e-commerce, enables an increased flow of people, goods and services, knowledge, and capital which help developing countries to achieve greater prosperity, economic and social development.

There is an essential role which developing countries should play in order to improve information technology and reduce the digital divide gap between them and the developed nations. The Least Developed Countries' (LDCs') governments should provide prerequisites for the information revolution. They should set liberalized, "pro-competitive" polices which, in turn, encourage the private sector to invest in the telecommunications industry (Larson, 3). Infrastructure projects should invest, not only, in technical resources, but also in human ones; thus, enabling an efficient physical infrastructure to exist (Larson, 3). It is also important to "promote universal technological literacy" through schools, libraries and community centers (Joint U.S.-Egypt Statement, 2). Entrepreneurs, workers, consumers and policy-makers should be well educated in order to be able to plan and target the defined goals. It is also crucial for an Internet application to be tailored to the needs and conditions of each country and consumer. Blocking systems should be available so that consumers could exercise their own choices and filter the content (Joint Statement, 3). Moreover, governments should liberalize some services' sectors, such as transportation, customs and delivery, which are closely related to telecommunications. Those sectors, if not liberalized, add cost to an online transaction; thus, hindering it from completion (Larson, 3). Governments should also create an electronic "notification system." When a transaction is finalized, other parties, such as Tax and Customs Authorities, shipping and insurance companies, should be electronically notified (El Sineity, 2). As it is stated in the Joint Statement between the United States and Egypt, it is beneficial that a country would not impose customs on electronic transmissions. Taxation, if any, should also be "clear, consistent, neutral and non-discriminatory" (1). It is extremely significant to create a system to collect statistics online. Businesses need to identify their target consumer by specific criteria, such as gender, marital status, age, or geographic location, in order to sell certain products online (El Sineity, 2).

Another complicated topic related to all e-business operations: is security. We require the application of "Computing complexities" in order to implement security on the Internet (Fellenstein and Wood, 205). Ensuring protection of data privacy, "the form of trust in any transaction" (Fellenstein and Wood, 205), whether personal, governmental or commercial, is necessary with regards to content, usage and method of collection (Joint Statement, 2). Although security and privacy issues are addressed nearly in every day transaction, "there will always be sites and end users who can be trusted" as there will always be those who cannot be trusted (Fellenstein and Wood, 205).

Private Sector and Senior Management Complementing Governments' Efforts

Governments could not support all missing aspects to reach a level of perfection in using network trading; however, it needs the support of other internal entities, like the private sector, to complement each other. For example, the private sector should be responsible for the development of information technology in Egypt which will accordingly promote both market competition and user confidence (Joint Statement, 3). As e-commerce is a valuable tool for competition, it

allows competitors within the same industry to provide customers with a superior value; and therefore, increasing shareholder value. Accordingly, executives should develop the application that yields competitive advantage. However, such an e-commerce application should be dynamic and realistic enough to cope with the rapid development of e-commerce. An application as such should "be seen as provisional" (Cohan, 93).

Additionally, the central role of the Internet in marketing should be recognized and prepared for by business-to-business marketers. Evaluation of their sites should be based on how much value does their site add to customers (Fellenstein and Wood, 80). Moreover, new features, frequent promotions and online surveys that attract customers to any site should be added and offered by marketers in different, creative, and attractive methods. This would help them to know the "buying patterns" of their customers (Fellenstein and Wood, 80). E-commerce transactions and payments should also be totally secured. Governments should provide advice on "threats, vulnerabilities, and security responses to ensure that critical" information infrastructure is protected. This could be approached by industry awareness and industry-based solutions (Joint Statement, 3). Moreover, establishing an Egyptian Certification Authority would help the government in regulating the relationship between online buyers and sellers (El Sineity, 2).

It is noteworthy that increasing awareness among businesses is not only the responsibility of the Egyptian government, but also it is the responsibility of Trade Associations and Chambers of Commerce to promote the use of e-commerce. Increasing such awareness among businesses and consumers could be through awareness campaigns, assistance and demonstrations tailored to specific sectoral needs (Ismail, Electronic Commerce and Small, Medium, and Micro Enterprises). It worth's mentioning, "policies should be crafted with caution and in recognition of the evolving nature of electronic commerce" (Measuring Electronic Commerce, 2). Senior management should play a crucial role in applying certain steps to accomplish their organization's goals. Senior managers "must take the position that failure is not acceptable" because mistakes are extremely costly and devastating (Fellenstein and Wood, 35).

Accordingly, Cohan stated ten crucial principles, in his book E-Profit: High Payoff Strategies for Capturing The E-commerce Edge, for e-commerce success. For instance, senior managers should economically and technically encourage people at all levels to engage in experimentation (35). They should also enhance customer satisfaction on top of other corporate values, such as product ordering and supply process. Taking into consideration that using e-service makes a company handle 33% more of service requests at 43% of the cost (Cohan, 35). Moreover, the management should encourage the harmony between Information Technology (IT) and all business units. It should also try non-traditional ways of problem solving since e-commerce success is based on its non-traditional approach of solving the "scarcity of information processing capability"(Cohan, 35). In addition, senior executives should not wait for corporate level approval of every experiment. However, financial managers should immediately enhance the development of such initiatives due to the low cost and high speed of e-commerce

projects. Furthermore, each company should discover the solutions of its own problems, since there are "no established rules for what works and what does not work"(Cohan, 37). It should adopt e-commerce applications which address its corporate inefficiencies and customers' needs. Moreover, e-commerce strategy, development and implementation, require the participation of e-commerce suppliers (team members) who are required to meet the organization's objectives. Senior management should supervise and evaluate e-commerce participants according to a set of criteria. They should use a process that maps the relative importance of the evaluation criteria to the relative performance of the suppliers on each criterion (Cohan, 229). It is also worth mentioning that the application should be tested before it "goes live," and that it must be aggressively marketed to reach the mass audience (Cohan, 39).

Nevertheless, e-commerce applicants should be cautious in implementing online trading in order to avoid certain pitfalls which are recurrent among network trading users. On one hand, senior executives should not let the new technology overwhelm the economic benefit to participants. On the other hand, they should make sure that all constituents to an e-commerce project, from conception to implementation, are successfully implemented. They should also avoid applying untested e-commerce application. Financial executives must have a strict evaluation for potential e-commerce projects. Such evaluation is essential for the executives in order to decide whether to proceed or not in a project.

Producing measurable results is also an important criterion for the success of managing an e-commerce implementation. For example, executives should make sure that certain economic benefits, such as lower costs or faster order processing, and other intangible benefits, like customer satisfaction, are delivered. They should also adhere to meet a project's deadline and budget. Nevertheless, the constituents of e-commerce, such as speed of growth, evolution, convenience, ease of access to information, and variety, are immeasurable. Thus, quantifying the "associated" value of e-commerce is challenging (Measuring Electronic Commerce, 1).

The success of an e-commerce project management depends on crucial steps, which senior management should approach. For instance, a dynamic response to feedback is absolutely significant. This helps in quickly adapting to customers' feedback, competitors' strategies and technology.

Live Reactions of E-Commerce Applicants in Egypt

Some Egyptian companies and stores have already started using the Internet for trading. In general, they foresee that online trading is the coming future of commercial transactions in the world and in Egypt as well; however, they still do not practically notice its importance to Egyptian consumers. It is generally observed that such companies or stores do not internally advertise for their websites. The main reason behind it is that "Egyptian consumers can come to the store and pick up whatever they would like to, they do not need to make an online order," as Shady Hamid, Manager of Olympic Stores-Maadi Branch, said. "Customers do not know that we have a site," he added, "It is our fault." It is noticeable that nearly 90% of online orders for Egyptian products are from the U.S. "We do not

accept online orders inside Egypt," said Mostafa Darwish, Owner of Darwish Gallery, "we are basically wholesaling and not retailing."

Regarding delivery and shipment, Darwish said that in case of retailing they prefer to send the products by express mail service companies, such as DHL and ARAMEX, "otherwise we use air or sea shipment." However, Al Shams Group, like other companies, only specializes in exports, especially to countries in Africa, Far East, and the Common Wealth. It also has a certain quota for the quantity to be ordered online which is at least a one-container feet.

It is worth mentioning that a lot of e-shops or e-businesses are trying to avoid the risk of default or junk credit card payments. Some of them are using letter of credit or transfer payment or personal checks while others are dealing with specialized credit card companies, such as CCNow which checks the validity of a credit card before performing a transaction. Others, like Olympic Stores see that "there is no risk in doing an online transaction because they mainly receive cash on delivery," as Hamid said. So, even if "we get a junk order, we will lose nothing," he added.

There is another kind of companies wh ich do not have an actual store or company but they provide the service of network trading through their personal contacts with production facilities and stores: as otlob.com and boustany.com. They do neither produce nor sell the products which they offer online; however, they just receive the online orders and ask producers, which they deal with, to fulfill the required order.

Conclusion

It is quite obvious that information technology in general, and e-commerce in particular, has a great impact on the educational and research levels, according to, some universities are trying to provide e-commerce courses in which they basically teach not only its concepts but also different online operations.

Simply put, it is true that Internet trading has been widely used worldwide; nevertheless, we, developing countries, among which Egypt, are not yet prepared to use such a facility. There are a lot of obstacles that we have to overcome first in order to be able to use it in everyday transactions. Although a handful of Egyptian commercial entities have applied the so-called "e-commerce", their fears and uncertainty about certain issues are still offsetting its marvelous advantages. Thus, as Shams said, online trading "is a good way of doing business, yet it is not the best way of doing it in Egypt."

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Multiple Criteria Prioritisation Model for Development Education and Research issues in Egypt

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Abstract

In this paper a systematic, and integrated, framework to improve the quality of the decision process related to strategic choices for development and education is presented. Throughout the second author's experience as a Senator of the Egyptian Parliament, it has been noticed that there exists a gap between Strategic Planning on the one hand and Policy Implementation and Resource Allocation on the other.

In this research work, we attempt to bridge this gap through the investigation of the impact of IT on strengthening research and development issues. The objective is to provide a systematic, and an integrated, framework to improve the quality of the decision process related to strategic choices for development in education and research.

Our proposed framework is based on a multiple criteria group decision-making technique called the Analytic Hierarchy Process (AHP). The AHP has been previously employed in business applications to rank strategic decisions. The first author has also applied it successfully in engineering applications (Alvi and Labib, 2001), and (Labib, and Shah, 2001). The AHP provides a feedback measure for consistency of comparisons and a what-if sensitivity analysis. In addition, we have utilised the ranking of alternatives in order to develop a resource allocation facility.

We applied the proposed approach to a report developed by the Chairman of the Shoura Council - Education and Scientific Research and Youth Committee, Professor Mahmoud Mahfouz, (2000).

The benefits of proposing such a model can be summarised as follows:

- *It is an IT based model for strategic and qualitative issues.*
- *It is considered to be an enabler of improvement in understanding of complex problems.*
- *We provide a "What-if" and sensitivity analysis of different scenarios.*
- *We also provide a feedback measure of consistency in judgements in a group decision-making environment.*
- *Finally it contributes towards "educating" Politicians to Use Flexible and Systematic Models in order to enhance development of education and research in Egypt.*

Introduction:

As Egypt approaches the 21st Century there is a group of challenges in the form of different dimensions. These dimensions constitute the criteria of education and research for the development of Egypt.

The First Dimension: Human Resource Development:

- National challenges, which includes expected population growth of an additional 35 million by Year 2020.
- The problem of resent education and research versus the development of technology, health culture.
- Roles of development and its branches.

The Second Dimension: The New International System:

It is related to global and national political and economical challenges (free trade and economic clusters).

The Third Dimension: Ability of Technological Comprehension.

- The effect of international political challenges, armaments race, national conflicts, and human rights laws.
- The monopolisation of technology imposed by northern countries over southern ones.

The Fourth Dimension: International Environmental Protection.

- Balanced utilisation of natural resources.
- Handling of social and economical issues that are created due to industrialisation, energy consumption. These might also lead to highly disseminated diseases.
- Enforcing the principle of sustained environmental development that will preserve the Earth in good condition for next generations.

Every one of the above-mentioned dimensions affects the ability for comprehension of technological development. It also affects the continuity and speed of international development of technology and ultimately the competitiveness of different sectors.

In terms of **Technological Development**, it is related to factors contributing to product differentiation and quality, and increase of productivity.

As for **Comprehension of Technology**, it means skills gained by enterprises (or individuals), which result from accumulation of knowledge and technology, and skills related to improvements in manufacturing and service industries.

Problem statement: Qualitative and complex measures

The main challenges are to: a. take decisive actions, and b. be responsive. This is Subject to better quality, availability and process efficiency.

Need for Decision Analysis: A question poses itself; why analyse even if decision has been already decided? Our response is:

- Psychological comfort: To assure unaided intuition.
- Communication Process.
- Advocacy: To convince others.
- Possibility to uncover new insights, or options.
- Resolving conflicts of interest.

The logic question that follows is: Why Not Simple Scaling? Reasons are:

- Measurements only represent some kind of arithmetical accuracy, which does not reflect the actual judgement or value.
- No Multi scaling.
- No feedback (Consistency).
- No intangibles.
- No Multi criteria.

The Analytic Hierarchy Process (AHP):

AHP is a method that breaks down a complex situation into a hierarchic order to facilitate pair-wise comparisons to determine the relative importance of each alternative in terms of each criterion.

The proposed framework is based on the Analytic Hierarchy Process (AHP) method using a system called ExpertChoice (1999), which is an implementation of AHP. The AHP is a multiple criteria group decision-making technique. It has been employed in business applications to rank strategic decisions. The objective of the AHP approach is to use the weights, which we call priorities, to allocate resources among the activities. It relies on modelling a problem into a hierarchical structure of a goal, at the apex, and levels of criteria and alternatives at the bottom. The elicitation of priorities is performed using pair-wise comparison at any one level with respect to each node of upper levels in the hierarchy. The ranking of alternatives are then potential solutions to the problem. It also provides a feedback measure for consistency of comparisons.

It is coupled with a sensitivity analysis phase and a feedback measure on consistency analysis. The AHP is based on the pair-wise comparison in a matrix format. The outcome priorities are determined based on eigen value.

The priorities are computed using the following three steps:

1. Sum the elements of each column:
   The following equation is used, $\sum_{i=1}^{n} M_{ij} \ \forall i, j$ where n is the number of criteria.
2. Divide each value by its column sum:
   The columns are normalised into a vector N using the following equation,

$$N_{ij} = \frac{M_{ij}}{\sum_{i=1}^{n} M_{ij}} \ \forall i, j$$

3. Compute row averages:

Averaging across rows to produce a vector *W* using the equation,

$$W_i = \frac{\sum_{j=1}^{n} N_{ij}}{n}$$

The *W* vector is the weighted value of each preferred alternative.

The Proposed Model:

Goal: Educational and Technological Development

Criteria:

- Human Resource Development
  - Cultural Development
  - Educational System
  - Health Service
  - Religious System
  - Environmental System
- International New System
- Ability to Comprehend Technology
  - Enterprise Comprehension
  - Individual Comprehension.
- International Environmental Issues

Action Decisions

1. Integration of the developmental model with the technological model, where the main feature of production is the state of art research and technology.
2. Open door economic policy and its side effects on national products.
3. Limiting (marginalisation) of Governmental role in production, and the privatisation of productive and service enterprises.
4. Promotion of direct foreign investment as a source of funding, technology, and knowledge-how.
5. Consideration of environmental aspects which is considered as a pre-requisite for development.

To summarise: alternative policies are:

- Integration of Developmental Model with Technological Model.
- Economic Globalisation.
- Limiting Role of Government in Production and Privatisation.
- Foreign Investment.
- Environmental Issues.

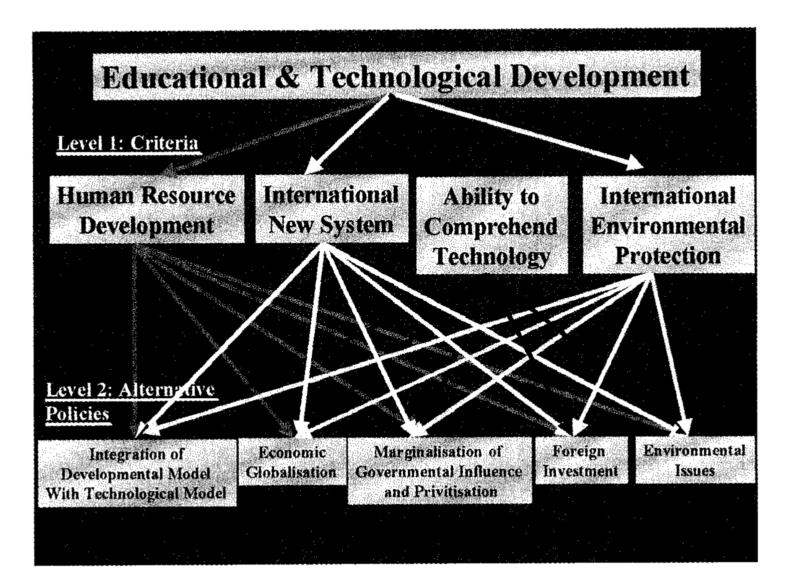


Figure 1: The Model Hierarchy

An Analysis of AHP using the developed Model

Once the hierarchy is formulated, the quantitative evaluation through pair-wise comparisons can be carried out for all the levels. Although the judgements are made using qualitative information available on the options, AHP allows one to convert this into quantitative data. This highlights the powerful nature of AHP. Pair-wise comparisons are undertaken with members of one level with respect to a member of the next higher level. To start the evaluation, the relative importance of the four criteria with respect to the goal is assessed to determine which one is most favourable to achieve the goal of educational and technological development

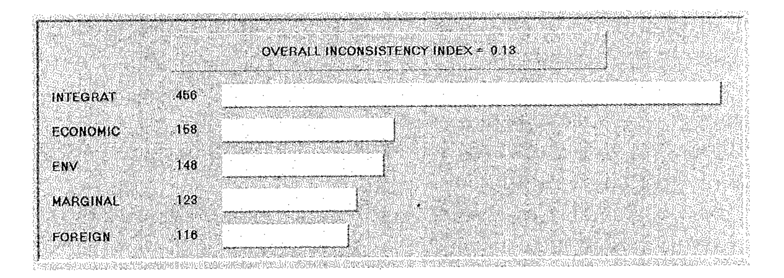


Figure 2: Global Priorities of Alternatives

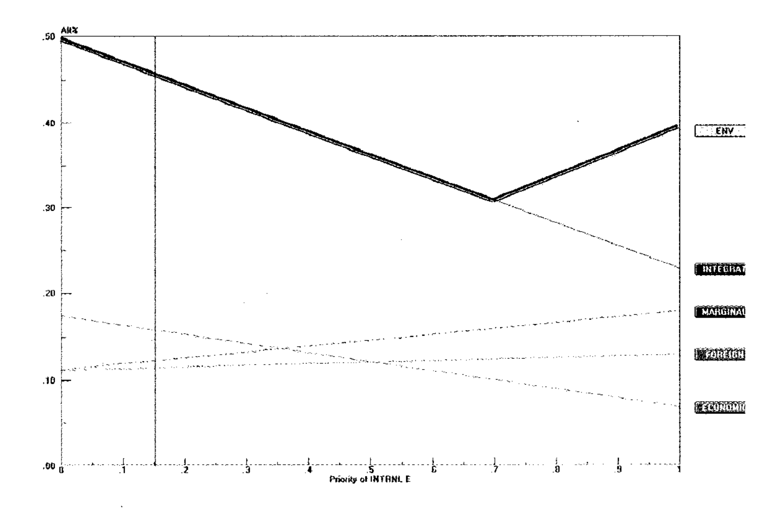


Figure 3: Sensitivity Analysis

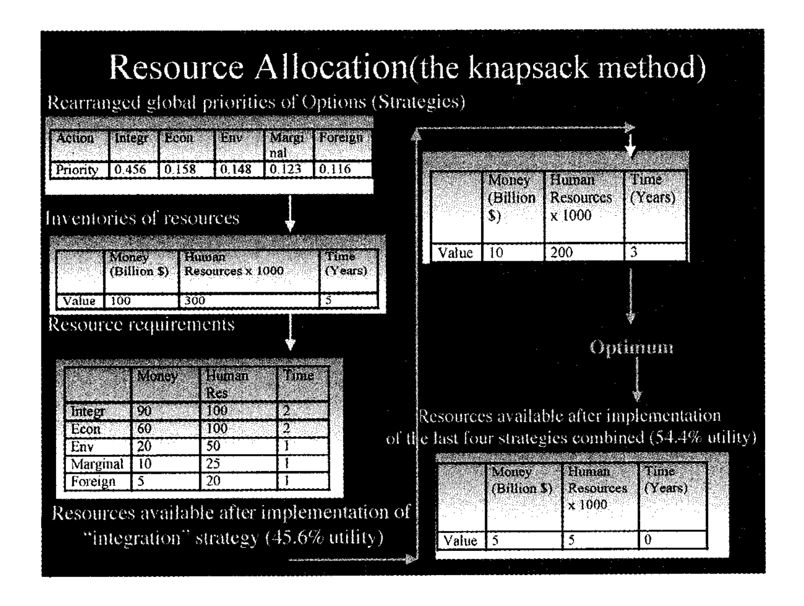


Figure 4: Resource Allocation

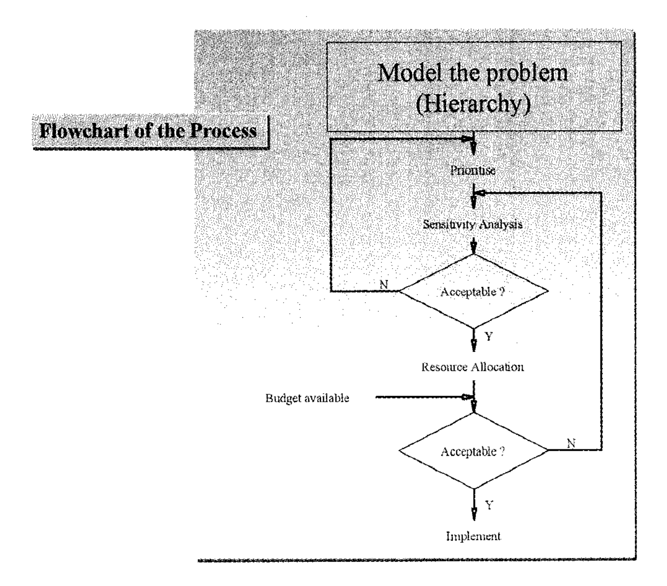


Figure 5: Flowchart of the Process

Conclusion:

The benefits of proposing such a model can be summarised as follows:

- IT based model for strategic and non-qualitative issues.
- An enabler of improvement in understanding of complex problems.
- Provision of "What-if" and sensitivity analysis of different scenarios.
- Feedback measure of consistency in judgements in a group decision-making environment.
- Help to Educate Politicians to Use Flexible and Systematic Models.

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The Role of ICT in Enhancing Continuing Education in Egypt

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Abstract

The developments in information and communication technology are increasingly affecting the impact of training and education institutions worldwide with the continuous development of traditional and unconventional methods to diffuse knowledge. Organizations around the world are therefore investing in electronic learning "eLearning" to capitalize on such technologies and magnify their impact. However, quality in many of these cases might be compromised raising the question of the variances between the quality deliverables of different educational methods. This paper presents issues related to the role that can be played by information and communication technology in enhancing continuing education in Egypt.

Overview

Electronic learning, as a new way to deliver education and knowledge, is a growing trend in the education and training sector and the online techniques are leading to improved ways to investing in larger numbers of people and to leveraging their capacities with fewer resources. This case is particularly important to Egypt with a market of increasing needs for more opportunities and resources to cater for the growing population. Electronic learning, as an advanced outcome of information and communication technology, is contributing to providing new mechanisms for knowledge acquisition and dissemination to a growing society of learners and trainees. The advantage is highlighted in the magnitude of people that could be reached using such techniques on a global scale irrespective of time and distance barriers. Among the growing global learning drivers there are diversified information and communication technology mechanisms, the Internet, the World Wide Web, knowledge management, innovation, change and adaptation and distance learning including web-based education and electronic learning.

Distance learning has many definitions and amongst which are the acquisition of knowledge and skills through the mediation of information and instruction encompassing all technologies and forms of learning at a distance. This has helped in the development and diffusion globally of a borderless community of learning and researchers that are benefiting from capitalizing on various information and communication technologies.

Building Egypt's Knowledge Society

Egypt is the cradle of an ancient civilization dating back to 3000 BC. It has a population of more than 68 million with over 16 million in different education stages since around 65% of the population are under the age of 25 years. This includes 14.5 million in schools and 1.1 million students graduated in 2001. It also

includes 1.2 million students at the university level where more than 225000 graduating annually and 300000 students enrolled in post-graduate education having Egypt ranked as 17th worldwide in the number of yearly graduates (Kamel, 2002). Egypt has the second largest economy in the Middle East and has successfully implemented its economic reform program that has enabled its current economic growth rate to stand at 6.2% annually and an inflation rate of 2.1% (Kamel, 2000). Like many other developing countries, Egypt is trying to modernize itself technologically and one of the main sectors the government is focusing on is education with a literacy rate of 61% and a computer literacy rate of 8% (Kamel, 1999). The government, in collaboration with the private sector, is trying to capitalize on the opportunities enabled by cutting-edge information and communication technology, and much of such efforts are directed towards human resources development.

Computing was introduced for the first time in Egypt in the 1960s but it was not until 1985 that information technology was put on the national agenda and became one of the building blocks of the overall business and socioeconomic development process. In 1999, a new ministry for communication and information technology (MCIT) was added to the cabinet portfolio to help accelerate the efforts for building an IT literate society capable of competing on a global scale and keep pace with the new trends of the digital economy. The agenda of the ministry focuses on investing in people and formulating a network for knowledge to help bridge the gap between the haves and the have nots in Egypt and also between Egypt and other developed nations to keep pace with the developments taking place elsewhere in the world. Among the roles played by MCIT is the development and establishment in collaboration with the ministries of education and higher education of Internet clubs as well as the enhancement of the curricula and resources in the different universities and institutes in Egypt. That includes 18 universities and 127 institutes (www.idsc.gov.eg).

New Trends in Knowledge Dissemination

The continuous innovation in information and communication technology led to the development of virtual organizations with different forms and structures with an ultimate goal to achieve markets differentiation and better performance through the use of information technology (Appel and Behr, 1997). Moreover, virtual organizations, if well implemented, can help realize more with less via consolidation and rationalization of resources allocation and use. The world is currently living in an emerging knowledge-based global economy where the continuous innovations in information and communication technology have forged stronger links between individuals, organizations and nations (Ungson and Trudel, 1998). This is leading to the creation of growing opportunities for collaboration in various fields and helping in the adaptation and management of technology to serve various purposes and objectives (Palmer, 1998). The 21st century will address more knowledge and information intensive issues where the critical element is people "humanware" (Kamel, 1998a).

With growing competition in information societies, developing standards and reducing costs, virtual organizations represent the opportunity in the 21st century

to re-allocate resources and to reposition organizational status in the global cyber market place aiming to supply goods and services by means of its staff, equipment and information systems (Sieber, 1997). This issue is magnified in developing economies where limited resources are usually allocated to sectors such as food and health as a priority to education. However, things are changing as the world is moving from focusing on products and manufacturing to knowledge and investing in people. Countries of the world will focus on developing new methods to absorb the growing learning needs of the society, and on managing knowledge, otherwise their business and socioeconomic development plans will be difficult to realize and developing countries will risk losing more grounds to the developed world (Kamel, 1998b). The use of information and communication technology has been a key factor in the success of the concept of virtual organizations. The availability of the World Wide Web and the Internet facilitated the exchange of information and knowledge between different partners and provided new mechanisms for the provision of value-added outcomes using information and communication technology (Gristock, 1997).

GloCalizing Knowledge in Egypt

Education and training are key success factors in societal growth. Therefore, it is urgent to invest in people and to build new generations capable of meeting market and industry challenges. The 21st century will create a knowledge-based society where the fundamental sources of wealth will be knowledge and communication rather than natural resources and physical labor and it will be up to different societies to identify the best formula that meets its requirements and realizes an optimum return in terms of information dissemination and knowledge management (Ungson and Trudel, 1998). Therefore, since 1985, Egypt has invested heavily in human resource development through two dimensions: education and training. Thus, over 1500 training centers were established to address management and IT issues linked to the needs of the market and covering various sectors in the economy across Egypt's 27 provinces. These centers had a remarkable impact on the development of human capacities, skills and knowledge (Kamel, 2000). The centers are expected to cater for the market needs in terms of education and learning using a pyramid of continuing education starting with community awareness and moving bottom-up to education empowerment, basic IT skills development and professional development.

In these phases, over the period [1998-present] a number of achievements through the collaboration between the government and the private sector were realized including the following:

At the community awareness level; the establishment of 1375 IT training centers (mass end users literacy centers) with 8-10 PCs in each; the development and improvement of a television, video and satellite community to help grow a media-driven society; the government also subsidized around 300 Internet Cafes in 2001 with a focus on low income communities and the introduction of the TACC Model [Technology Awareness Community Centers] through the establishment of 3 centers and serving over 4000 users with a plan to establish 5 TACCs in each of the

27 provinces within the coming 3 years.

At the education empowerment level; the provision of affordable PCs, software and Internet connectivity for students; the introduction to computers in school education (bottom-up) – Kids clubs, schools and universities, the establishment of many access centers in universities and schools, the integration of IT in curricula development, the establishment of Information Technology Institutes (ITIs) and the investment in training of trainers.

At the basic IT skills development level; the diffusion of training in basic PC applications including word processing, presentation skills, business and technical writing, database management, spreadsheets and the Internet. In that respect, over 78000 trainees were trained since 1998 with an 18% annual growth in the volume of trainees. The program has been conducted under the theme – AAA - "Awareness, Access, Affordability".

At the professional development level; the training focused more on the needs of the industry and the business community and it included information systems, networking, software engineering, systems analysis and design and business development. In that respect, over 11600 trainees were trained since 2000 with a 6% annual growth in the volume of trainees. The program has been conducted in collaboration with leading IT certified corporations worldwide including Cisco, Microsoft, Oracle and IBM.

The investment in people and knowledge was mainly designed to meet the challenge of investing in human capital through a hybrid of lifelong learning mechanisms both traditionally and unconventionally to meet the growing population needs. As for the strategy it was mainly based on capitalizing on innovative information and communication technology through building globally networked educational institutions. Finally, the strategy "GloCalization" it depended on the delivery of educational programs from around the world that are localized according to market needs using a hybrid model.

With 16 million students in the education sector, the challenge is to develop modalities to be able to educate and train more people while optimizing the allocation and use of available resources. Therefore, building a virtual learning model represents one of the possible vehicles that could realize such an objective. The aim of the model would be the development of strategic alliances with learning institutions around the world to deliver degree and non-degree programs for the market in Egypt using state-of-the-art information and communication technology. The model builds on three main directions; home computing which serves in the knowledge dissemination and documentation; electronic mail which provides an open channel between instructors, students and institutions and finally the world wide web which is to date the best information retrieval vehicle worldwide that is reaching users everywhere and anytime in a user-friendly format.

The Virtual "eLearning" Model

The virtual eLearning model is based on the development of strategic alliances with universities around the world to deliver post-graduate academic degree programs for the market in Egypt using state-of-the-art information and commu-

nication technology via the adoption of a hybrid eLearning model. It is believed that the eLearning model can help move the dissemination mechanisms and vehicles from the classical to the virtual mode through five different modalities: creation, reduction, empowerment, capitalization and minimization.

Creation; by having a universal pool of first-class educational resources, reduction; by decreasing the dependence of the classical learning models on the skills of the instructor, empowerment; of both instructors and learners, capitalization; on the experiences development and improved by different partners and alliances and finally minimization of the adverse effects of limited in-house resources by expanding virtually.

The virtual eLearning model is based on the collaboration with partnering institutions acting as small one-person firms bringing together their efforts and resources to serve the activities they jointly deliver. The model realizes the new working world order where corner offices, paper memos and personal secretaries are out and laptops and teleconferences and periodical meetings are in (Gray, 1995). The cooperation between different partners could best be described as virtual arrangements with a vital role played by their joint virtual team which is one of the success factors in this operation being one of the core components of virtual organizations (Knoll and Javernpaa, 1998). The basic driving factor behind the collaboration between those teams separated by thousands of miles was the development of a dynamic system that sets the responsibilities for each institution and structures the relation between both them (Rockart and Short, 1991).

Conclusion

The transfer of knowledge is not to be successfully realized without the flexibility to accommodate to local market needs in terms of domains, scheduling, and administration through continuous market studies reflected in the concept of "GloCalization". Moreover, improved customer services is a learning process that develops based on the trust to be built between different team members, the adaptation to local conditions and the improvement of the learning process of the virtual team to be reflected in the service provided to students (Davidow and Malone, 1992). Moreover, the use of the World Wide Web, the formulation of news groups among students, web posting of assignments and the delivery of coursework via electronic mail add to the virtual delivery of education; this also includes enrolling students in virtual libraries which is as important in providing online accessibility to a wealth of knowledge in terms of publications, references, books, journals, etc.

The electronic learning model has been built around a number of attributes including developing partnerships for knowledge diffusion to contribute to business and socioeconomic development in Egypt. The model relied on a category of learning that is technology-based and where the instructor and the students are separated geographically. The model provided access to knowledge for students regardless of their geographical locations while being in Egypt, using familiar technology and accommodating to different cultural norms and values. Education has always relied on the communication of thoughts and ideas between instructors

and students taking many forms across different times. There has always been the barrier of geography and time. Nowadays, with the innovation in information and communication technology using eLearning, these barriers are gradually being removed via information highways and advanced communication technologies (Guthrie, Olson and Schaeffer, 1998, Grimshaw and Kwok, 1998).

The hybrid model for virtual organizations shows that the world is rapidly moving away from the belief that there has to be one theory of the organization and one ideal structure. It demonstrates that the options are wide open to adapt organizational development and knowledge management to fit local market needs and conditions (Drucker, 1997). Such model could be applicable in virtually all sectors of the business, industry as well as academic.

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Virtual Extension and Research Communication Network

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Abstract

This paper presents the structure of a Virtual Extension and Research Communication Network whose objective is to strengthen and enable linkages among the research and extension components of the national agricultural system. The work presented in the paper lies in a wider project whose overall goal is to improve, the agricultural advisory services provided to Egyptian farmers and in particular to resource poor farmers in order to increase production in food and agriculture with the goal of raising farm incomes.The project has recognized the Internet as a potentially powerful tool for improving communication between research, extension and farmers. Through the Internet two-way communication can be enhanced, links can be established between geographically dispersed people, and processes can be collected and large volumes of information in a variety of forms, rapidly dispersed. Some of the information contents to be disseminated through the network is identified, collected, and published.

Introduction

Internet is a potentially powerful tool for improving communication between research, extension and farmers. The **Virtual Extension, Research and Communication Network (VERCON)** employs this potential to establish and strengthen linkages among the human and institutional elements of agricultural research and extension. The VERCON enhances two-way communication, establish links between geographically dispersed people and, collects processes and rapidly disperses large volumes of information in a variety of forms. The VERCON concept was developed as a joint effort between FAO's Research, Extension and Training Division (SDR) and the FAO World Agricultural Information Center (WAICENT).

The Egyptian VERCON FAO/TCP project is the first field application of this innovative approach. The objective of the project is to establish a Virtual Extension and Research Communication Network in Egypt in order to strengthen and enable linkages among the research and extension components of the national agricultural system. The overall goal of the project is to improve, through strengthened research-extension linkages, the agricultural advisory services provided to Egyptian farmers and in particular to resource poor farmers, in order to increase production in food and agriculture with the goal of raising farm incomes. This project will provide valuable lessons for Egypt as well as for other countries in the region. It is very important here to emphasize that VERCON strengths the research-extension linkage by providing an electronic medium for communication, storage, and retrieving information that has mutual benefit of researchers and extension workers such as research results, and growers problems. This information will help researchers to develop their research programs and extension workers to make use of the research results.

Due to the limited number of pilot sites, we could not add all the Research Institutes in this phase and we decided that the Agriculture Extension and Rural Development Research Institute (AERDRI) be representative of the Research Institutes in this phase. It will work as a mediator between the Extension body and the research body. In the future, the research institutes will interact directly with VERCON.

This paper will concentrate VERCON Information System Contents identified based of needs assessment of the Researchers and Extension workers. These contents will grow with time and more contents types will be added for the current and future stakeholders.

The following sections describe the physical structure of the communication network and the VERCON information system main functions namely: a search facility for extension brochures, a grower's problem solving component, a search front end for an agricultural statistical database, expert systems consultation facility, a discussion forum where participating parties in the VERCON system can exchange ideas, and news broadcasting system.

Overall Structure of the Network

The proposed physical structure of the network was to have CLAES as the central node because the infra structure and human resources it has. All sites are connected through national backbone. Two sites in Cairo are connected through dial-up connection: Agriculture Extension and Rural Development Research Institute (AERDRI), and Central Administration for Agricultural Extension Services (CAAS). The AERDRI will be connected this year to the ARC Local Area Network and hence will have permanent connectivity with CLAES. The Economic Sector (ES) has already Internet connection through a leased line. The four sites in Kafr El-Sheikh: The AERDRI office at the Regional Research Station, the Agriculture Directorate, and the two Extension Centers at E-Khademia and Aremon, have dial up connectivity through a local Internet Service Provider.

The Extension Brochure's Search Facility

Over the years, the Central Administration for Agricultural Extension Services (CAAS) has issued a number of brochures in order to bring awareness to farmers as to common issues relating to the farming of various crops. To enable rapid retrieval of this information, a specialized search interface, was provided. In addition, a facility for simply browsing those brochures online has also been made available through a separate link that has been provided in VERCON's front page. Though most of these documents are available in paper form, providing a search facility for targeted information retrieval can save extension workers valuable time and effort. To do so, sections within these documents have been automatically indexed based on domain specific information. The system that implemented this functionality was composed of a number of components including:

1. A Structured Document Indexing Component: This component generates an index record for each section of a given HTML tagged extension document. The generated index will be used later for achieving targeted retrieval where

sections rather than documents are returned in response to a query.

2. A Keyword based Document Indexing Component: This component indexes each section in an extension document based on the significant keywords contained within it.
3. A Structured Query Interface Component: The structured query interface helps the researchers to rapidly fetch the required information from the extension documents by selecting one or more values of the index parameters.
4. A Free Search Query Interface Component: This component provides another way for users to search the extension documents using keyword search supported by most of the web search engines

The Growers Problem Solving Component

The general problem-solving component provides an environment in which extension workers and farmers can put their problems directly to researchers and have answers to those problems available for other users to reference. The component will serve both as a searchable repository of solved problems as well as a medium for posting problems in a structured manner. When confronted with a problem, it is expected that an extension worker will consult the expert system and/or the search facility and that in most cases a solution will be found from either source. However, in rare cases when such a solution cannot be found, the problem will be entered using the Problem Solving component and appropriate sources will be consulted to find a solution. A detailed description of the problem in free text as well as a simple classification of it will be used to characterize the problem and its solution.

When a farmer approaches the extension officer with a problem for which a solution cannot be found using the expert systems or information found in extension brochures, the extension officer will enter the problem (without its free text description). A search utility will attempt to match the problem to previously solved ones and to present the extension officer with matching solutions. If a solution is found, then the extension officer will simply use the offered solution. The search utility will also attempt to match the problem against similar unsolved problems. If a match is found against unsolved problems, then the extension officer will be allowed to indicate that he/she too is facing the same problem and is interested in the solution. A counter and a log of all those who are facing any one given problem will be kept and used to set the priority for solving different problems. If however, neither a solution nor a similar problem is found, then the extension officer will have to enter the problem. (by entering a free text description for it). The extension officer may also record what he/she thinks is a solution for that problem. The problem will then be automatically dispatched such that extension officers at the appropriate agricultural directorate can review it. Subject matter specialists who have been assigned problem-solving privileges within the directorate will be able to view the problem and either modify the suggested solution, if one was entered by the extension worker, or to simply enter a solution. After a solution is entered, the problem and the solution will be available for reviewing by the Agriculture Extension and Rural Development Research Institute

(AERDRI) representation of the regional research station which will forward it in turn to a specialized institute within the station. The solution will be reviewed by authorized researchers in the station and modified if necessary. The extension institute in the regional station will be responsible for publishing the approved solution. Once a solution is published the problem as well as its solution will be stored in the problems DB for future reference, and both will be visible to all users of VERCON. \h Figure 1 represents this sequence. This model will be repeated for all regions across Egypt.

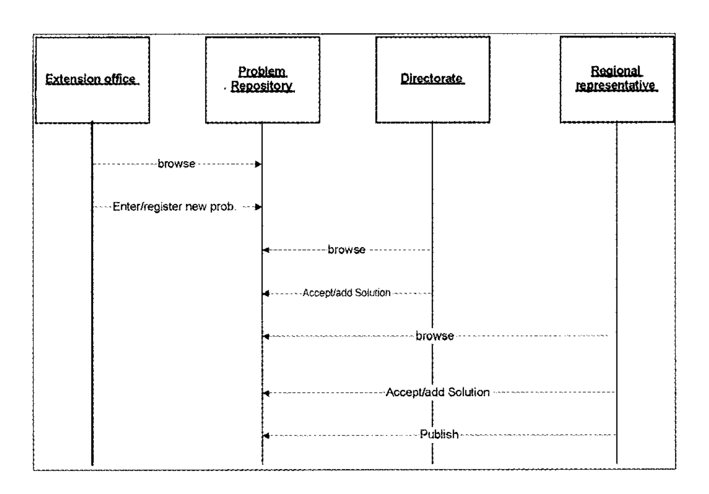


Figure 1: Problem solving and publication sequence model

As time goes by, it is expected that this component will develop into a rich repository of problems and their solutions and that it can itself be used to update extension brochures and the knowledge within expert systems.

The Economic Statistical DB Search Front End

Information within the Economic database provided by the Ministry of Agriculture and Land Reclamation, will be made available through a search front end. The database provides historical statistical information about the productivity of various crops across Egyptian governerates as of 1980 and to the present day. The database is implemented in SyBase and maintained by the Economic Sector of the Ministry. A Web interface for accessing these statistical data will be part of VERCON. This information will serve in measuring the impact of the research program and extension services nationwide. The implementation of the Web interface was done using active server pages (ASP) that are capable of translating queries into SybaseSQL form.

The Expert System Consultation Facility

Expert systems are powerful tools that can assist farmers in identifying problems and solving them rapidly. The central laboratory for agricultural expert systems will aim to make the rice and wheat expert systems available on-line for use by any interested party though specifically aimed for extension workers. These expert systems will be available through the "Consult the Expert" option in the system's front page. Once they entered the Expert System front page the extension worker will be asked to enter the static data of grower farm first. Extension workers will then be offered the facility of selecting from among a number of expert system subsystems and consulting those regarding: Land preparation, Variety selection, Planting, Irrigation, Fertilization, and Harvest (in Wheat only)

Each module will be provided independently of others. Investigating the integration of the various modules will be carried out after successful deployment of each to the Web. A communication model will be implemented for each module so as to promote intelligent question asking behavior. Static information about the user's farm, equipment, available material, etc. will be requested from the user when he / she registers for using the system. The user will be provided with a username and a password, which will uniquely identify him/her when he/she next uses the system and which will be used to load his / her static information for use by all expert system modules.

The static data of the farm are kept in a database such that the user does not have to enter these data each time he / she consults the system. The database is shared by the various expert systems, thus permitting the user to enter farm data only once, as opposed of entering it for each expert system. The database includes four types of data namely: general farm information, soil and water data, equipment data, and fertilizers data.

The land preparation module gives specific advice to the user about how to prepare his/her specific land for rice cultivation given: Plantation Area, Soil Salinity, Planting Type, and Previous Crop Residues, time available before planting. Its output operations are: Soil tillage, soil leveling, Basin dividing, and wet leveling

The variety selection module recommends to the user the varieties most suitable for his / her land given: soil salinity, irrigation water availability, irrigation water quality, and the user requirements such as odor for rice. The output of this module is the suitable Varieties, its expected yield, growth period in days, and its resistance to some disease, and other feature of the variety.

Planting outlines planting methods best suited to a user's land given the variety to be cultivated, and soil salinity. The output of this module is the planting date, tool and method.

Irrigation produces an irrigation schedule given soil salinity, planting type, water source, variety, and planting date. The output of this module is the Irrigation Schedule.

Fertilization produces a fertilization schedule given soil salinity, planting date, variety, planting type, and previous crop. The output of this module is the Fertilization schedule.

Diagnosis determines the causes of abnormal observations on the plant given

plantation date and abnormal observations on the plant. The output of this module is the causes (disorders) of the abnormal observations.

Treatment provides the user with the treatment of identified disorders given the causes of abnormal observations (disorders). The output of this module is the treatment schedule.

The Discussion Forum

One of the main goals of the VERCON project is to enable extension workers and researchers to communicate either directly or indirectly through the various components provided by the project. Among these components, are the discussion forum that will provide a means for extension workers to share their views and experiences and discuss issues and problems pertaining to their activities. Researchers will also be expected to have an active role within the discussion forum and to offer their views and advice whenever appropriate. The scope of topics to be covered is envisioned to be, though not limited to, the following:

- Issues and problems related to using the various offered expert systems
- Issues and problems related to a given crop

Unlike the general problem-solving component, the forum will allow users to informally share various ideas and opinions.

The interface provided for this forum will allow various users to either establish a new discussion group for the purpose of discussing a specific issue, or to subscribe and / or participate in already established ones. Once users have subscribed to a group, they will be able to see and search all messages that have been previously posted to the group to which they have subscribed. They will also be able to create new discussion threads or add their input to existing discussion threads by posting messages to that group.

The News and Events board

The news and events board enable extension workers and researchers alike to post news or event announcements that are of interest to the VERCON community. By default when a link to the board is followed, all events that have been posted will be presented. The generation of a web page containing all announcements is a dynamic process, which utilizes a data store containing information about the announcements as well as a presentation template. In addition, a link for allowing the posting of a new event will be offered. Similarly, when a news item is published, it will be dynamically added to VERCON's front page. A copy of each posted news item, or event announcement is forwarded to one or more people who have the authority to approve it so as to ensure the legitimacy of the items. A person, who has approval privileges, is offered tools to delete or modify an announcement of a news item or an event as well as a tool for publishing it.

The implementation of this board utilized the FAO's News and events Management System (NEMS). The authority for entering and publishing news is given to AERDRI as a first step. Later authorization for other participants will be given to enter news but the authority for approving and publishing the news will be only preserved for AERDRI.

Conclusion

The main achieved outputs of the project are:

- A prototype version of the VERCON information system established under the technical leadership of CLAES (http://www.vercon.sci.eg/).
- 7 pilot centres, representing research, extension and administration. The Agricultural Extension and Rural Development Research Institute (AERDRI), and its branch in Kafr El-Sheikh Regional research Station represent the research stakeholders. It is expected later that all research institutes will be part of VERCON. The Central Administration for Agricultural Extension Services (CAAES), KafrEl-Sheikh Agricultural Directorate (AD), and the two Extension Centers (EC's) at Khademia and Aremon, represent the Extension Stakeholder. It is expected later to replicate this model for all extension centers in Kafr El-Sheikh Governorate, and later on for all other governorates nationwide. The Economic Affairs Sector (EAS) represents administration stakeholders. EAS already has its own statistical database that it availed to VERCON.
- 15 technical staff at CLAES have participated in developing WEB applications of VERCON. 30 researchers and extension workers were trained on using Internet, 11 researchers and extension workers were trained on reporting problems using growers problem component of VERCON. It is expected to train 66 extension workers in the very near future. More training courses are scheduled for other components of VERCON.

It should be noticed that VERCON provides the Researchers and Extension workers with tools for strengthening their interaction. The proper usage of these tools will strengthen the linkage between research and extension. The Research-extension direct linkage can be observed in the Grower Problem Solving and Discussion Forum components. Indirect linkages exist in the Extension Brochure and Expert Systems components. The researchers provide their research results to the CAAS that use these results to produce the extension brochures published on VERCON. Extension workers can provide their comments on these brochures through the direct linkage components. The same can be said for Expert System Consultation Facility component as CLAES acquire the knowledge in the expert system from the researchers. Extension workers using the Expert Systems can provide their comments through the direct linkage as well. Although this sort of linkage exists now but it is very difficult to store, retrieve, classify, and produce reports from verbal and undocumented interactions. Providing an electronic medium to store all these interaction will help in documenting and rapid retrieval of all types of interactions.

In the future when all research institutes are connected to VERCON a component to provide a mechanism for proposing the research programs collaboratively with the extension workers may be developed. However, the current set up facilitates this to be done through the discussion forum. The disadvantage of using the forum is that it is a general tool and hence is not oriented specifically to do this.

We are currently in the phase of deploying all the components in the field to monitor and measure the impact of using VERCON in Kafr El-Sheikh governorate. Preliminary evaluation showed that the extension workers are interested in using the extension brochure component, as this is the first one to be deployed. Extensive training is being conducted for other components of VERCON that are ready now. ■

Computer Assisted Learning: The Effect on Learning Finance

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Finance has always been looked at by students as a difficult subject and most students have always tried to delay taking finance courses till the time they are about to graduate particulaly those students who do not specialize in finance is the i.e. students minoring in business adminstration who have to take one course in finance and those who are majoring in business adminstration and not taking finance as a concentration. Feed back from students on the two core curriculum courses in finance offered at The American University in Cairo was collected through informal discussions with students as well as their comments in the instructor evaluation. The informal students feed back have indicated the they regard finance as a rigid subject since the they can not sometimes comprehend the material without the extensive use of numerical examples and preferably real life case studies. Particularly in topics like leverage and capital structure, dividends policy, derivatives and others students frequently loose track of the link between what they study in class and the application of thsese concepts unless they can actually apply the concepts to real cases. The exersices that are available to them especially for the undergraduate level are not comprehensive. They would question the student in one or two things that do not give a complete understanding of the concept. Students can answer such questions easily and even score high grades on these questions in exams, but can rarely establish the link between different topics and see the effect of one decision on other areas of the company. This became obvious when the mid term exam results were reviewed. In a question on Leverage almost 83% of the class scored the full mark, however, discussions that took place later in class demonstrated that very few of them actually comprehend the topic and can participate in meaningfull discussions. In topics like this and in the study of finance in general what one wants to achieve is to have students that can see the effect of one decision on the other areas of the business. For example, a decision on dividends distribution would affect the firms liquidity, leverage, investments, cost of capital, profitability and most importantly the value of the firm.

The second indication of lack of students comprehension of some topics was their answers tp questions. While almost all of the questions in undergarduate exams are quantitative, students are sometimes asked to comment on the numeric results the they achieve. These comments have in many cases demonstrated that they can apply equations, understand what the results indicate, but also indicate that many students do not have a comprehensive view and their abllity to tie different topics together is limited.

This lack of comprehention have resulted as indicated above in low interest in finace as a subject and not many students want to major in finance compared to other fields of concentration. Therfore, one can conclude that there is a need to

stimulate the students interest in finance in order to increase their comprehenshion of the subject. One of these ways seemed to be computer assisted learning.

Computer assisted learning techniques have become more and more popular in both undergraduate and graduate learning. In the area of teaching finance these techniques range from just a simple computerized spread sheet to sophisticated simulation programs that stimulate students' thinking and help them integrate different concepts together. It is essential for students who study finance to integrate the concepts together and understand the effect of one decision on the different financial statements of the firm. These financial decisions in turn affect the value of the firm which maximizing it is the ultimate goal of the financial manager.

Computer assisted learning was introduced in the second undergraduate finance course during the Spring semester (Finc 404) in two ways. The first is a concept that rests on giving students a real life case study composed of different modules that match the content of the course. As the topics are covered throughout the semester the instructor asked the students to feed the computer program with their decision, then observe, and comment on the effect of their decisions on the value of the firm rather than just answer the questions on paper. The student is also required to justify his/her decision. To do this a spread sheet which was originally developed by collegues in the management department[1] was modified in order to serve the new purpose. The sheet was modified such that students have to take a decision on the capital structure and feed that into the computer. The computer in turn would adjust the relevant variables such as interest expense, amount of equity, additional debt required if any...etc, and calculate the financial ratios each time a decision is entered. This allowed the student to observe the effect of different scenareos on the financial position of the company and consequently the variables that affect the value of the firm. This in itself helped students understand the different variables that are affected by the capital structure decision and enabled them to make a meaninful recommendation. After they were finished with their testing and making their decisions they were asked to write a short report on the case highlighting their decision and why they think that their decision was the right one. That required an analysis of the company before and after the decision.

The results showed a significant improvement in the comprehension of the topic by the students. That was very clear from the reports that they wrote. The quality of a lot of these reports was very good and many students demonstrated a clear understanding of the topic. Also, a questionaire was made and students were asked for their feedback on the program and whether it helped increase their understanding of the subject or not. Results of the survey indicated the 79% think that it was helpful to them. 46% however indicated that it would have been better if the instructor spent more time in class demonstrating how the program should be used.

The second idea was using a ready made computer simulation program to explain the concept of derivatives to students which has always been difficult for them to comprehend because it is a relatively new concept that is not yet applied in Egypt. The program was developed and supplied to the instructor by Chicago

board of Trade (the largest derivatives exchange) and helps students visualize the idea and simplifies the concept for them. Four students in the graduate class took decisions on the use of derivatives to hedge certain risks that their companies face. The effect of using the derivative was commented on by the student and compared to a no derivative situation and the effect on the company's profitability was calculated. All four students informally indicated that the program was very helpful to them and three of them came into a team to do their term paper for the course on that subject.

In conclusion one might say that the use of computer assisted learning teqniques can be of value to the students in the area of finance. The instructor intends to add more modules in that program and enable students to apply more subjects in the coming semesters. The results will also be evaluated to make sure that studenets benefit from the teqnique.

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[1] The spread sheet was developed by Dr. Dina Rateb and Mr. Mohamed Naguib to be used to spread financial statements of companies and compute the financial ration in order to facilitate the analysis process. ■

Information Technology and Egyptian Mass Communication Education: A Case Study of Egyptian National Universities.

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Abstract

Enhancing education is a matter of sustaining power to meet the challenges of the 21st Century. Mass Communication education is part of this sustainable power. In Egypt, Mass communication education in national universities meets several challenges on both levels of educational institutions and teaching faculty.

This paper entitled "Information Technology and Egyptian Mass Communication Education: A case study of Egyptian National Universities " will consider multiple factors affecting the use of technology in mass media education in Egyptian national universities.

On the educational institutions level, there is lack of infrastructure, including computer labs, telephones, telephone lines for online connectivity, and television and radio studios. On the teaching faculty level, faculty members lack the skills of working online, such as navigating the Internet and searching online databases. Moreover, the majority of them are English language illiterate.

Other problems to be considered in this paper are mass communication students' English language illiterate and the curricula used in Mass Communication Departments and how they can fit into a global education category.

In this research study, an analytical survey is conducted on Journalism and Mass Communication faculty members and their department chairs at the Egyptian National Universities to investigate two factors. First, it will inquire if the skills of Faculty members and students qualify them for global markets. Second, it will examine the curricula of these Journalism and Mass Communication departments. The study concludes with a suggested framework to improve the education status of Journalism and Mass Communication departments at Egyptian National Universities to meet the challenges of the forthcoming millenium information technology innovation .

Introduction

Terms like the information age, information superhighway, and information technology revolution have become inescapable and, inescapably, contributing to the ways in which changes in media education are perceived. Dealing with media education changes for the 21st Century, there are some factors that should be focused on, such as developing educational programs to incorporate high-tech curricula to suit the changes taking place in global work markets.

Changes in the needs of the work markets should be reflected in media education programs, which should address a new set of objectives, such as the quality of the training students get, and the courses that students learn and whether

they fulfil their future career to meet their career obligations.

To achieve the above-mentioned goals, there are some requirements that should be considered, including the educational purposes that are to be attained by the media programs with defining the criteria on which their attainability is assessed; and the educational experiences needed to be communicated to students and their effectiveness.

As for Egypt, education is a basic challenge and research can contribute greatly to identify and empower Egypt to mobilize its human resources to compete in areas where it has a comparative advantage and a strategic interest" (Cain, 2000). Few studies were conducted on Egyptian Journalism and Mass Communication education, most of which agreed that Egyptian Journalism and Mass Communication programs suffer from many problems.

This study attempts to evaluate the present status of Egyptian Journalism and Mass Communication programs and provide an envision for the new Millenium perspective. The study will also examine the obstacles hindering the move toward a 21st Century media education in response to the information technology revolution.

Literature Review

The Egyptian Case:

In his article in Al-Ahram newspaper, AL Banna (2000) quoted a president of an Egyptian university stated that Egyptian education has been suffering from different problems. Higher education is facing several obstacles:

1. Universities' facilities can not incorporate the tremendously increasing number of students.
2. Several private universities are opening as a way of investment from which rich students benefit from it even if they are ignorant and unqualified for universities' education (Fahmy, 2000, p. 4).

As for the curriculum, higher education, universities' values, research programs are frozen and unchanged since the sixties. Also, faculty, staff and academic positions are backward and badly need to be considered and developed.

In his article, Seif (2000) stated that education crisis is of two faces : lack of funding and basic education complete separation from university education. He recommends that education needs to be well funded and related to university education.

In his article, Fahmy (2000) discusses the current situation in the Egyptian universities concerning faculty members' status and performance. He states that without financial support for attending conferences and the availability of the material and information needed for conducting academic research in universities' libraries, faculty can not be fully responsible for the scarcity of their academic research productivity. Young faculty members are not given in their departments equal chance for promotion and privileges as senior faculty.

Media Education in Egypt:

In his thesis, Jbara (1999) discusses the transnational journalism education

concept in Egypt, its scope, and the obstacles that encounter it. The study identifies sixteen barriers to introduction of transnational journalism education in Egypt, which reflects the present status of journalism education. These barriers include:

- Lack of instructors familiar with computer-mediated teaching.
- Low Internet accessibility in Egypt.
- Non-familiarity of students with computer-mediated learning methods.
- Low bandwidth (capacity) of Internet in Egypt.
- Poor intranet working system in Egypt.
- Lack of pedagogical experts and planners familiar with information technologies.
- Absence of specialized information databases in Arabic.
- Scarcity of Arabic content on the World Wide Web.
- Obsolescence and scarcity of information and communication technology (ICT) hardware in Egyptian schools.
- Lack of online publishers specialized in designing and updating Arabic content for journalism courses.
- Absence of quality assurance processes for national and foreign educational providers.
- Customs restrictions on certain types of cross border educational materials.
- Absence of clear mechanisms of accreditation that can cope with the local as well as the global nature of education by the Supreme Council of Higher Education.
- Lagging Arabization of information and communication technology tools (computers, multimedia, and software).
- Lack of academic freedom in Egypt (Jbara, 1999, pp.108-109).

Ragab (1976) argues that mass communication teaching in the Arab World, including Egypt, is facing many problems, which are classified into three main categories. First, there is lack of qualified faculty members, who are not efficient in both teaching and training students. Second, there is lack of learning technologies in universities for training students and lack of cooperation with media institutions to allow training of students in these institutions. Finally, universities do not have adequate up-to-date research resources. Accordingly, Ragab suggests that Journalism and Mass Communication departments should make use of qualified non-academic personnel in the media field to teach the courses of relevance to their experience in the field. Moreover, Journalism and Mass Communication departments should fund the publishing of their own newspaper, establish well equipped radio and television labs.

El Nawawy (1995) provides another list the problems that serve as obstacles in the Egyptian journalism education. These barriers are:

- Out-dated traditional syllabuses which follow the technological and professional advancements in journalism.
- Public schools discouragement of attributes that are extremely required in journalism, such as creativity and independence while cultivating in the students a sense of uniformity and obedience.
- Lack of foreign language proficiency hinders their access to foreign

media sources.

- Academic programs provide insufficient information about the history and development of Egyptian and international press.
- Inadequate information concerning journalism ethics is offered.
- Lack of cooperation between media organizations and journalism schools whose programs are "too academic." Accordingly, there is a gap between theory and practice (pp. 182-187).

Amin (1998) illustrates further on the problems in journalism programs summarizing them as follows:

- Limited access to international media studies due to the lack of knowledge of foreign language.
- Weak academic standards and outdated curricula.
- Only few universities emphasize practical training in their programs.
- New models for mass media studies are not likely to be adopted by Mass Communication professors, who are the product of an oppressive system.
- Because of bureaucracy and prohibitions related to the system, specific types of research are still extremely difficult to conduct (9-12).

El Kellini (1998) conducted a comparative study on the students of the Radio and Television departments at Mass Communication at Cairo University and the Journalism and Mass Communication Department at the American University in Cairo. The study indicates that Cairo University courses focus on broadcast programs' production, such as training students on producing radio magazines, talk shows, features, documentary films, and news programs. On the other hand, the American University in Cairo courses focus on the translation and production of various types of news programs. In addition, American University in Cairo students are privileged as they are trained on using technologically advanced machines at the Adham Center in producing broadcast materials. Both universities' departments focus was on studio training; however, Cairo university students' also were trained in the field in various places outside the university. Both students were trained to work and think in-groups, starting from choice of the topics, choice of guest speakers, to the production and directing techniques. Both universities are keen on inviting experts from the field to either teach or give lectures to students about their experience and give them ideas about what to expect in their practical life. The American University in Cairo students have a high level of English language proficiency, while Cairo University use several methods to higher their English and / or French language proficiency.

Several studies were conducted to evaluate media education and training in Egyptian Universities. The findings of such studies indicate that there is a weak relationship between media education curricula and the quality and type of training that students receive. The curricula in most journalism and mass communication departments are not subject to continuous updating, and do not contribute to the development of the students professional skills. In most cases, training in media institutions is not organized and well planned, but students and some of their faculty take the initiative. There is a lack in the number of specialized faculty members; thus, most departments hire experienced professionals from the field

to teach introductory level courses.

Research Design and Methodology

This study aimed at evaluating Egyptian Journalism and Mass Communication academic programs performance in relation to faculty members, students and curricula. The study was set to answer several research questions:

1. Is Egyptian media education prepared to cope with the continuously changing nature of global media education?
2. Is Egyptian media education system ready for incorporating learning technologies?
3. What are the obstacles which hinder incorporating learning technologies in Egyptian media education?
4. Is the existing evaluation system of Journalism and Mass Communication faculty performance efficient and sufficient?
5. Are there quality evaluation measures of Journalism and Mass Communication programs curricula?
6. Are the facilities provided for media education qualify students to meet the expectations of globalized education?
7. Are students and faculty evaluations of each other and their curriculum will enhance Egyptian media education to meet global standards?
8. Is the availability of computer-based technology environment for students will fulfill their career?

Accordingly, it was appropriate to use a quantitative method and descriptive survey. This type of survey allowed the researchers to describe and evaluate the current status of the programs under study. To test the research questions, two or more variables were examined. A coding sheet was constructed to collect data about research variables.

A questionnaire was designed consisting of 21 questions covering the three areas of interest of this research study: Egyptian Journalism and Mass communication academic programs, faculty, and students. The questionnaire included close-ended as well as open-ended questions to provide in-depth responses. A cover letter illustrating the purpose of the study was used to introduce the questionnaire.

The questionnaire was administered on a purposive selected sample, which is a non-probability sample to allow the study to produce the greatest value under time and money constraints (Wimmer and Dominick, 1995, p.65). The sample was chosen to meet a certain criteria, which is being a department chair of a Journalism and Mass Communication in Egyptian universities. The researchers distributed the questionnaire to the department chairs under study.

Pilot Study:

A brain storming session was conducted to test the questionnaire with a group of Journalism and Mass Communication Department post-graduate students and Journalism and Mass Communication faculty at MSA University. As a result of this session, the researchers reconstructed the questionnaire.

A pilot study was conducted to pre-test the validity and reliability of the questionnaire by consulting a group of three experts in the field. The questionnaire was modified according to their remarks.

Data Collection:

Nine of the twelve Journalism and Mass Communication departments have graduated classes and those were the applicable sample to this research. Also, one head of department has just taken over his chairmanship responsibility and was not familiar with the Egyptian system. Two heads of departments at the faculty of mass communication at Cairo University were not able to answer the questionnaire due to time constraints. The head of Journalism Department at the South Valley University, Qena Branch was the head of Sohag Branch until August 2000; thus, was able to answer the questionnaire for both departments.

Summary:

Although Mass Communication education in Egyptian public universities has been established for more than 20 years, it is still lagging behind for several reasons including the shortage and inefficiency of many faculty members in using modern information technology, and lack of resources reflecting lack of training facilities and learning technologies that can be used for educational purposes. At the same time, media education is expanding horizontally on the expense of the quality of education.

Conclusion:

The study shows that Egyptian Mass communication education in Egyptian public universities suffers from lack of learning technologies including Internet labs, computer labs, photography labs, professional TV and Radio studios, and language labs. Consequently, it lacks the use of electronic books and journals, online databases, multimedia and authoring packages. However, two TV and Radio studios were inaugurated as a result of such researches and evaluations at the school of Mass Communication of Cairo University by the Minister of Higher Education on the Mass Communicator Day this year. Moreover, Egyptian media educators believe strongly that E-mail will never replace the traditional meetings with students.

Based on the above fact it became difficult to evaluate media programs at regular intervals. This made media education in Egypt far away from the international standard. So, courses do not satisfy their objectives in most cases, and students are far behind international standard.

As for faculty, the study shows that most media educators in Egyptian mass media are far away from using information technologies for education purposes, including the use of computers and Internet for searching. Also, they do not use learning technologies for educational purposes. On the other hand, faculty members are not rewarded enough for their research productivity. They only get promoted, and the process of promotion meets sometimes complications and

conflicts with higher ranks which leads in most cases to unhealthy intellectual and research environment. Also, it decreases the cooperation among faculty members within their department and other colleagues in similar departments. All of the above mentioned factors affected the mass communication negatively and hindered the development of media education in Egyptian public universities.

However, the study shows that all mass communication departments train their students at various media institutions both print and broadcast. Also, they hire experts from these institutions to lecture, teach and train their students on campus. Furthermore, the development of media education, including the use of information and communication technologies, depends on faculty members, who are self- motivated, research oriented, and create scholarly supporting atmosphere in their environments.

Recommendations

I. Recommendations For Faculty Members:

Being a part of the information industry, which is the center of sweeping changes, journalism educators should consider the issue of dissemination of information, and the problems that affect journalists' capability of adopting new information technology, and the way they use technology to communicate with their audience.

As for the qualifications of future academic university faculty should have strong desires to understand and communicate their understanding to their peers; consequently, leads to a better society. Future university faculty should have significant role in fulfilling the challenge of relating education to work and promote applied learning. Promotion of professors should be accompanied with more research. Teaching and service in the field are as important as research & publication. So, this will motivate and enhance professors' skills, which will benefit students who will be taught by more qualified and experienced faculty.

Faculty members should ensure that their courses' content are up-to-date, precise, representative, and suitable to the position of the course within the program. Faculty members should communicate the course objectives to students and choose methods of instruction that are effective in assisting students to achieve these objectives. Professors should focus on assisting students to know how to access information, evaluate it, analyze it, and finally use it to solve problems.

Educators must consider their interest to prepare students for truly global competitive markets. New recruits should be creative problem solving, highly articulate, effective personality, mentally agile and completely devoted to overcoming challenges, and this may be achieved through the use of high information technology.

Faculty members have to integrate technology into their curriculum and increase their use of technology in the classroom. For example, educators at the University of Columbia created a software that assist faculty members, even those with no technical proficiency, in building sophisticated World Wide Web-based educational environments. Some of its features are: allowing faculty to conduct quizzes for students online with different question orders and automatically

graded and scores are analyzed; facilitating for faculty to explain assignments, set its grades and evaluation; and assist faculty in making use of other educational web sites. This software is already available for the American University in Cairo faculty (Amer, October 2001).

Faculty members should make use of e-mail and online discussion groups on the Internet to communicate their students regarding assignments; and generate discussions among students about the course content which help them to freely express their prespectives.

Recommendations For Student's Evaluation:

Part of improving teaching system of media education is the student's evaluation. Thus, students should have a strong traditional media eduaction and equipped as well with technological knowledge, which would assist them to adapt rapidly to the changes in the means news and information are delivered.

Recommendations for Media Education Programs:

Higher Education in the 21st century have to emphasize on continuing education, achieve success through the linkage between the higher education and elementary and secondary schools. It has to bridge the gap between the research universities and the corporate world, and prepare students for changing the world and changing careers. Media education should adopt new models of learning which use learning technologies to develop a two-way interactive student-focused.

Egyptian Journalism and Mass Communication Departments should establish JRMC Teaching Excellence Center to achieve a defined set of objectives, including:

- Support and provide expertise to both JRMC faculty and students in utilizing new teaching and learning technologies, such as the use of advanced multi-media tools, and teleconferencing.
- Provide expertise for Internet searching and navigation.
- Provide support for student and faculty to launch their homepages.
- Prepare students for a global learning process by encouraging and assisting in the establishment of virtual classrooms.
- Penetrate into the existing system by making use of the teaching assistants for selected courses and sharpening their skills to be the future professors.

Assessment methods may include evaluation of individual program components; perceptions and performance of graduating students; evaluations of the internal and external constituents, and comprehensive program evaluation. Such assessment of information is the factor that helps in deciding whether a department or even a college would live or die.

Recommendations for Media Curricula:

Media education curricula should be relevant to world trends and career opportunities. Media education curricula should reflect the changing needs of the news industry and media companies. It should reflect the changing needs of the news industry and media companies. Thus, student should have a strong traditional media education and equipped as well with technological knowledge, which

would assist them to adapt rapidly to the changes in the way news and information are delivered.

Media education program at Kansas University has set an example and changed and updated its curriculum to incoporate new technology, and produce graduates who are capable of moving into numerous media news operations. To illustrate, six courses were combined into one course covering: "news/information, which includes news-editorial, broadcast and magazine journalism; and strategic communications, a blending of management, marketing, advertising and public relations" (Nicholson, July/August 2001, p.15).

Students gain six new experiences in just one shot, and they practice and sharpner the skills learned in this course in advanced courses. Accordingly, students have a better understanding of media and become more skillful and proficient (Nicholson, July/August 2001, p.15).

A well-planned curriculum requires the input and engagement of staff, administration, faculty, and other concerned specialists in the field. Changes in media education should lead to valuable content that is communicated to the students. It should also ensure that teaching would maximize the students' achievements on all levels to reach the highest standards.

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Enabling Communities and NGO's with Information and Communication Technologies

SPECIAL SESSION ON INFORMATION TECHNOLOGY AND CIVIL SOCIETY IN EGYPT

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I-Executive Summary

The Ninth AUC Research Conference on „Information Technology and ist impact on Research and Education" held April 7-8, 2002 at the American University in Cairo included a special session on ***„Information Technology and Civil Society in Egypt"*** as part of its activities. The objectives of the session are: to shed light on the complex issue of ICT and Community Development, to highlight the present experiences, and to emphasize the importance of the role played by the three partners: the Government, the NGO's, and the Private Sector.

This session was held on Monday April 8 and started with a reception to all AUC guests. The opening welcome was given by Dr. Mahmoud Farag (the Vice-Provost) and the openening remarks were given by Dr. Hoda Rashad the chair of the session and co-organizer of it. Dr. Salah Arafa then gave the main presentation in the session on the topic ***„Enabling Communities and NGO's with Information and Communication Technologies"***. The session was co-organized by Dr. Salah Arafa (Physics Department) and Dr.Hoda Rashad (Director of SRC) and sponsored by the Vice-Provost Office for Graduate Research. Arabic was the language of the meeting and simultaneous translation was available.

In the presentation Dr. Arafa showed that the use of Information and communication for social and economic development by and for local people, specially in poor rural areas, is not a new phenomenon. Since the arrival of the personal computer, social activists, developers, and entrepreneurs have realized the potential of ICT to influence not only their own future prospects but also those marginalised and disadvantaged individuals, groups and communities in the society. The presentation showed that there are few years of field experiences and there are also some useful signposts and warning signs. It was reported that there are also pioneers in this technology frontierland who have sacrificed themselves to pave the way for others, and there are many, so called social entrepreneurs, willing to follow in the pioneers footsteps and add to our knowledge and innovations.

The main questions raised by the presenter for the audience to think about and to reflect on were:

Is IT needed by the Society ?
Will it contribute to Poverty Alleviation ?
Will it contribute to Eradication of Illiteracy ?
Will it contribute to Community Development ?
What potentials ICT have for Improving the Effectiveness of Civil Society ?
What are the Challenges and Constraints for reaching out ?

Following the presentation, there was an open discussion where all participants were asked to reflect and comment on the main questions posed to the attendees and on Dr. Arafa's presentation. Almost 60 NGO leaders, development practitioners, educators, researchers, funding agencies, media writers, and intellectuals as well as representatives of Peoples's Council attended this session. It was clear from the comments and reflections that ICT is needed and there are existing some scattered efforts that needs to be effectivly coordinated in order to achieve a real impact.

This paper is the full text of the presentation and a summary of the discussions took place in that session in the presense of such a unique diversity of attendees. The session discussions concentrated on the reflection from the participants on the impact of IT on the NGO organization, the service deleviry, and the empowerement of communities in the developing areas in general and in Egypt in particular.

II-General Introduction

The use of Information and Communications Technologies (ICT) for social and economic development by and for local people, specially in poor rural areas, is not a new phenomenon. Since the arrival of the personal computer, social activists, developers, and entrepreneurs have realized the potential of ICT to influence not only their own future prospects but also those marginalised and disadvantaged individuals, groups and communities in the society. The Information and Communication Technology (ICT) Age is not a matter of conjecture, it is a reality for both the developed and developing world. The major question that we hope to answer in this presentation as an opening for this special session of the 9th Annual AUC Research Conference is how can such technologies be put to productive use as an effective development tool? In this presentation, I would like to bring to your attention some factors and issues as basis for our discussion afterwords.

There are few years of field experiences. And there are also some useful signposts and warning signs. There are also few pioneers in this technology frontierland who have sacrificed themselves to pave the way for others, and there are many, so called social entrepreneurs, willing to follow in the pioneers footsteps and add to our knowledge and innovations. Knowledge and Information are essential for people to respond successfully to the opportunities and challenges of Social, Economic and Technological changes. Including changes that help to improve productivity, alleviate illiteracy, eradicate poverty, and generate meaningful employment. But to be useful, knowledge and information must be effectively communicated to the people who need it. The question is how? We all know that development in general and, in simple terms, a process of changes. Changes to the better of course. But the main question for us today is: who is responsible for

these changes? Those who know (have information and posses communication skills) ? or those who do not know (illiterate and poor) ? This is what we know today as the Digital Divide.

II.1-Main Questions for Discussion

The main questions for us to think about and to reflect on are:
Is IT needed by the Society ?
Will it contribute to Poverty Alleviation ?
Will it contribute to Eradication of Illiteracy ?
Will it contribute to Community Development ?
What potentials ICT have for Improving the Effectiveness of Civil Society ?
What are the Challenges and Constraints for reaching out ?

II.2-ICT and Civil Society

When I searched the internet about „**IT and Community**" I found 4034 published articles in the recent 5 years. Some were used for improving health care and services, and some are for creating partnerships between care-givers and beneficiaries. The general effort is an attempt to develop a set of strategic priorities that would support delivering and using high quality, timely information when and where it is needed for planning, operational, evaluation, and financial decision making. Table (1) give the results of the search.

The private sector and the government have spent millions of pounds looking for ways to succeed in what is known today as the knowledge economy. New ICTs shift costs, extend markets, expand information flows, and change the borders of organisations. Such changes will force NGOs to rethink its strategies and operations and to adjust. ICT can offer new advocacy strategies, new ways of funding, new ways of reaching out, new ways for awareness and conteneous training and adult education, and new ways of creating jobs. ICT puts the NGO sector on the edge of a major transformation and offers great opportunities for NGOs to cooperate.

TABLE (1): Search for publications on the field of Information Technology.

Key - Words	Number of Articles Found
Information Technology (IT)	3090
IT and Education	508
IT and Research	660
IT and Development	789
IT and Service	761
IT and Training	259
IT and Production	121
IT and Science Education	11
IT and Field Research	5
IT and Illiteracy	2
IT and NGO	2
IT and Poverty	1
IT and Rural Development	1
IT and Community Education	1
IT and Community Development	None

In the remaining time of the presentation I would like to discuss with you some topics of relevance to our later discussions.

II.3-The Existing Gaps

There exist many gaps between the residents of the same community. The „Have" and Have not", the social gap, the educational gap, the communication gap,........,and today we add the digital gap or the digital divide.

Let me start by making the following statement: Information has nothing to do with communication. Information represent quantity in our educational systems and communication represent the quality of our educational systems. We should look for the totality in education, the whole or the integrated education. This means finding a balance between quantity and quality. In the German language there is a distinct difference between the two types of education: „**Buildung**" and „**aus buildung**"; where „aus buildung" represent only the instruction education or say the skill or degree you have got from the school or from a university, but „Buildung" is the total education of a person; what he knows and how he react and interact. There is a saying that: one-eye man in a country of blind can see enough. But is this enough for sustainable development in the era of information and communication? I dought.

Students at all levels should be trained on solving their own problems and they should pay (be punished and of course be rewarded) for their mistakes and services, specially those who are becoming our future managers and citizens. And let us not forget that healthy mind is in a healthy body (and that means also healthy food and healthy environment). Short training or a dose of ethics in a course does not regenerate the whole person. Studies showed that 3 month is the decay time after a short intense training on management. That is why they recommend now to have short training sessions over a long period of time i.e. continous training and education. Such approach was very successful in the AUC - Basaisa Village project to change attitudes and behaviour.

II.4-ICT For Community Development

Mike Gurstein is one of the world's leading experts in the application of ICT to community economic and social development. He recently published a book entitled „**COMMUNITY INFORMATICS: Enabling Communities with Information and Communication Technologies**". This book could justifiably be regarded as a bible for any academic study of the impacts of that converging technologies of telecommunications, computing and multimedia on the future development of society. This is in fact from the point of view of the developed countries. What can we say about that here in Egypt as a country of the developing world?. There has been a quest over the past two decades for the „Holy Grail" of the self-sustaining community network forming the backbone of a more equitable global society. Many pioneers in this technology frontierland have sacrified themselves to pave the way for others (we have one of them with us today: Prof. Boshra Awad), and there is no shortage of social entrpreneurs willing to follow in their footsteps.

UNDP Consultancy mission on ICT for Development were visiting Egypt end of January and were asking for a brainstorming session on „HOW CAN ICT HELP IN ILLITERACY ERADICATION?!. They contacted me for participation. Unfourtunatly the meeting was scheduledon Sunday 27th of January and I had to leave for Austria on Saturday 26th of January. The question can, now, be directed to all of us here.

II.5-Egyptian NGOs Active in Education and Training

A survey (Feb. 2002) of the registered NGOs in the data base of NCPD Information Center indicated that over 1100 NGOs in Egypt are involved in Education and Training activities, with the majority of them located in Cairo, Alexandria, Beni-Suef, Kayobiya, and Giza. Very few are involved in training and production and non is using ICT for contineous education or business development.

II-Some Facts and Concerns

What is represented to people, about people, and for people is often not the choice of the people themselves. The confusion between technology as a goal or as a medium for a goal: Sustainable Development. Overdependence on these technologies: Will be vulnerable and paralyzed when they are unavailable to us.

Digital devide: Put certain classes of people in touch with one another around the world, and totally marginalized others.

More basic questions are: (a)For what purposes are people obtaining information ? (b)Who controls it ? (c)How is access classed and gendered ? (d)Will people have more power over their lives ?... More questions ?

Here are more facts:
USA has more computers than the rest of the world.
South Asia, has less than 1% of the world's internet users but 23% of the world population. The internet users worldwide are:

Much More	*Than*
Male	Female
Under 35 Years	Older People
University Education	Primary Education
High Income	Low Income
Urban Based	Rural Based
Non-Arabic Speaking	Arabic Speaking
Elite Minority	Majority Population
Students	Teachers

About 97% of all internet hosts are in developed Nations. Which means western information. The local, indigenous, and traditional knowledge being endangered.

IV-Community Schools

Three approaches, distinctive but yet related, are identified for partnership between communities and schools, universities, research centers and private sector. This partnership aim is to help members cross traditional boundaries that have separated them and work together to achieve sustainable community development.

AS A COMMUNITY CENTER

The school becomes a resource for lifelong learning and a vehicle for delivering a wide range of services.

USES THE COMMUNITY AS CURRICULUM

Students generate information for community development: surveys – needs assessments – land use patterns – documenting local history, practice and technologies through interviews, photos, videos, ...etc.

AS DEVELOPER OF ENTREPRENEURIAL SKILL

The students identify potential production and service needs in the community, study with the members the feasibility and help establishing businesses to address those needs and to provide both employment and service needs.

The future trends are towards more multifunctions and more conservation of natural resources. Community schools are resources that needs to reorganized and administered as a multifunction resource aiming at sustainable community development.

V-Selected Stories

Followings are few selected ICT stories which could be useful to learn from, to tailor, or to upgrade to our needs in the sector of NGOs.

V.1-E-Commerce in Ejura, Ghana

It shows how ICTs can support small and medium farmers in marketing their products, increasing their revenues and improving their farming and product processing practices. This is done by enabling them to access information on regional markets developments and international agriculture know how. Ghana MOFA initiated the setup of the SBDU in 1998, with the main objective to efficienly promote Ghana's non-traditional export products in the regional and global market by improving contact between the farmers and the markets. The start-up capital, amounting to 50,000 US$ was provided by IICD. Accurate information about product prices and demand levels is a primary necessity for sound farm management. For detailed information on this project please view the site www.iicd.org or write to Edward Abdo-Dankwa: eddie@mofa.gov.gh and Mohammed-Sani Abdulai: csug@ghana.com

V.2-AKASHGANGA, India

AKASHGANGA means the Milky Way. This project use simple but appropriate information technology, to facilitate timely collection of milk and thereby generating, higher profits and less waste for the rural milk producers who are members of the Dairy Cooperative Society (DCS), a unit in the Indian Cooperative Structure. The activity is carried in 400 locations 365 days a year, 6 hours a day, serving approximately 1.5 million farmers daily. For detailed information on this project you can view the site www.iicd.org or the site www.skepl.com. One can write to Ujval Parghi: ujvalparghi@hotmail.com

V.3-Global Technology Network, USA

This project began about 10 years ago as an initiative of USAID. The project uses the internet as the main tool in facilitating technology transfers to developing countries and it focuses on four areas: Environment / Energy – Agribusiness – IT – Healthcare / Medical Technology. There are 40 offices in 35 different countries in the past 9 years. Each office has a representative responsible for feeding trade loads into a central database located in Washington, DC. They intelligently identify, select and source valuable technologies not yet available in LDCs. The project led to over $ 300 million in tech-transfer to LDCs with a total budget of 10 million per annum (USAID). Of course the main defficulties are in dealing with different languages, different coustems and financing the transfer of appropriate technologies. One can view the followin sites for more information: www.iicd.org or www.usgtn.org . One can also write to Steve Rynecki: srynecki@usgtn.net

V.4-The Virtual Souk

This project began january 1998 as an E-commerce for unprivilaged Artisans. Indigenous, traditional artisans from middle east and North Africa have limited or no access to markets, information, technical skills, and financial services. The project creates opportunities for those unprivileged group of artisans and enhances their trade and help in the conservation of their traditional knowledge. To know more about this activity view the foloowing sites: www.elsouk.com , www.southbazar.com , www.iicd.org www.soficom.com.eg , or write for more information to Maurice Hazan: info@elsouk.com

V.5-THINK TANK TEAM (3T)

A company that was formed in 1998 and ist main aim is linking ideas, and enterpreneurs with finance. They held the first Arab project ideas Market in January this year in Cairo. More information can be obtained by viewing the site www.3tlink.net or writing to 3t@link.net

As a conclusion I beleive that NGOs have a central role to play in helping communities to introduce the uses of such new technologies in what might be called Community Digital Utilities with the leadership from the private sector and with the support of the Government. Let us not forget that life starts by learning and that half the knowledge is to know where to get it. This session is a modest start

but it is also an invitation to keep connected, to keep in touch, and to keep the dialouge and cooperation for sustainable development. I am sure that we can achieve a lot if there is an honest will.

I would finally like to take this opportunity and announce that there is an **ICT STORIES COMPETITION June 18-21, 2002, held in Washington, DC, USA :** http://www.iicd.org **The Dead Line is April 15th, 2002. If any one is interested to apply I wish him/her the best of luck. I also have with me some selected sites and addresses for future conferences on the topic for those interested.**

VI-THE OPEN DISCUSSION

Dr. Hoda Rashad opened the discussion by thanking Dr. Arafa for such an excellent and informative presentation and then reminded every one with the main questions Dr. Arafa raised for discussion and encouraged every one to participate. Dr. Arafa added that there is also a questionaire in Arabic and in English and urged NGO representatives to fill it. This would be used as a guide to the direction of our future efforts in ICT for NGOs.

The first speakers indicated that efforts have just started in Egypt. The general NGO Federation got a data base on active NGOs and will soon announce a Web site to get information about activities and opportunities. There is also a project supported by GEF-UNDP to desighn a site for NGOs working in the field of environment. NCPD has completed a data base on Egyptian NGOs. Some commented that this is well and good but most NGOs especially those in rural areas have no connectivity (one said that some NGOs have no even a Telephone or a Fax) and more no skilled staff.

Dr. Laila Iskander draw attention to the need for greater focus on grassroots, community-driven projects and initiatives with the general aim of promoting sustainable community development. Many participants stressed the need for training and education for the local people to adopt the technology to fit their local needs.

One person raised the issue of the major challenge for donors and technical assistance community to interact with, facilitate and support local efforts in ways that are not paternalistic and domineering. The ultimate goal should be, he added, to foster local empowerement through ICTs, rather than create dependencies. Another person commented that the main guiding principle is that local people in communities, and specially in rural areas, and their needs should be, he insisted, the driving force behined all Information/Communication projects.

One commented on Dr. Arafa's opening statement on who is responsible?: Those who know or those who do not? by stating that as universities and research institutions in the country can provide the nuts and bolts for bridging the information gap and the digital divide they carry the responsibility for providing their share of data and information that inform and empower the poor farmers and the unemployed graduates. Raising awareness and access to appropriate training was stressed by many to be important pre-requisites.

Dr. Boshra Awad talked about ICT and ist impact on education and specially women's education. She designed a bilingual chemistry course on the internet in

cooperation with the University of Illinoi, USA.. It is free any body can use it and hopes for more efforts in that field and should be supported by both the government and the private sector.

The idea of Community Digital Utility that is administered by local NGOs and made ICT accessable on a pay-to-use basis was well received and welcomed by many but local skills, knowledge, initial financing, and continous training were issues of main concern by many.

VII-Acknowledgments

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Sasakawa Symposium 2002

Empowering the Youth: Education in the Age Of Information Technology

Moderator: Provost Sullivan

Papers

I. Nurturing Human Skills: The Road for Educational Reform

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Introduction:

Human Development Approach:

In the age of global competition and interdependence, every nation searches for its areas of strength in order to nurture them and survive in a constantly changing global environment. However, previous attempts of "catching up" have focused more on economic growth, rather than on social or human aspects of development. That is why their developmental efforts remained flawed and its fruits were not sustainable. Therefore, nations should redirect their efforts and undertake a "human" approach to development. The aim of this human development approach is to enlarge people's choices through the acquisition of basic skills that would enable them to compete in the age of information technology. It also establishes the basic structures through which the citizens can unfold their acquired capabilities. The main catalyst of the process of human development is the educational system. According to Dweidar, the basis for any progress is the educational system as it affects all other areas of development. He points out that the educational system should be responsive to the ongoing changes in the global environment. Education is not only a strategic goal, but it is also a basic right and asset to cope with the technological revolution (Dweidar, 1). Hence we should regard education as the door that would open up and facilitate economic, political and cultural development.

Linking Education to Social Variables:

Moreover, education is also extremely important due to its impact on the other variables of development like poverty, health and unemployment. According to Anis, education is a catalyst for social mobility and political stability. It helps promote family planning and hence reduces the rapid population growth in the developing countries. He explains that poverty and education are interlinked, as many poor children don't go to schools and work to help their families. As a result, they

remain illiterate and cannot improve their living conditions and hence they remain entangled in this vicious circle of poverty and illiteracy (Anis, 111-114,1995). Furthermore, Ammar draws our attention to the fact that the lack of education affects human health. He states that many illiterates are subject to certain illnesses like AIDS due to their lack of awareness. He also points out that infant mortality is very high among the illiterates and the poor (Ammar, 54-55, 1996). Thus, the promotion of education would not only foster human development, but also helps improve living and health conditions of the poor in developing countries.

Education as a Right:

As we stress on the importance of education for national development, one should not ignore that the right to education is one of the basic human rights that any country should guarantee for its citizens as the right to free education has been guaranteed since 1962. However, despite this equality of opportunity, Siam argues that the quality of education has been deteriorating since then. He believes that this low quality of the educational services may have contributed to the high illiteracy rate in Egypt (Siam, 15-19, 1997). Moreover, as we noted in the beginning, human development involves the creation of structures for the graduates to unfold their capabilities. However, given the high unemployment rates, it is evident that the graduates cannot benefit from education and become frustrated as their education failed to achieve their goal of social mobility.

Four Pillars of the Educational Process:

Thus, to address the problems of the educational reform one needs to consider the four pillars of the educational process. The first pillar is the administration and management of the educational process like the teachers, school directors and even the small workers as they all have an impact on the behavior of the school children. The second pillar is of course the student himself: his health status as well as his social and economic status which affect his performance in education. Furthermore, Siam adds the family of the child is also an important variable in the educational process that affects the social environment in which the student lives. Finally, the main pillar is the school itself as an institution that does not only provide knowledge, but also helps promote social values and fosters human skills and capabilities (Siam, 112-115, 1997). Thus, when undertaking educational reforms one should consider all these four factors as each influences the success or failure of these reforms.

Age of Information Technology:

Nature of the Technological Revolution:

In addition to these "indigenous" factors of the educational process, one should not ignore the effect of the international environment on educational reform. We all talk about the age of information technology or the technological revolution that affects our development and poses challenges on us. However, it is important first to understand the nature of this "revolution" and then explore

the challenges that it poses on our developmental project. Ali argues that the age of information technology affected the production process moving from mechanical machines to automated devices and from natural resources to artificial materials. It also led to a shift from labor to capital-intensive techniques. He points out that the basis of any productive force nowadays is knowledge (Ali, 71, 1998). Therefore, nations should concentrate on "building" the appropriate human resources that would not only be able to deal with these new information and techniques, but would also generate new innovative ideas that would foster their nation's overall development project in a highly competitive world.

Bahha El Din explains that the nature of the technological revolution differs from the agricultural and industrial revolutions as the latter extended through a relatively long time frame while the technological advancements take place in a few decades and had economic, political and above all moral implications. He adds that nations now compete in the production of ideas and services not goods and machines. That is why they need excellent information systems to cope with rapidly changing specializations. However, he warns that this rapid technological progress poses a threat to our heritage and culture. He explains that technopoly, that is the domination of technology on indigenous culture, led to various social and moral problems. Here comes the important role of education as it enables us to cope with the latest technological improvements and at the same time allows us to preserve our culture and traditions (Bahaa El Din, 36-44, 1997).Thus, we realize that the age of information technology poses threats, but at the same time. provides opportunities for us. Hence education is the only means through which Egypt can "produce new knowledge and capable human resources" that would not only be able to protect themselves from the new technological and cultural threats, but would also seize these opportunities to promote the long development process.

Challenges of the Technological Revolution:

If education is so important and human development is our main asset in the age of information technology, the question is then how should we invest in our people and what are the challenges that encounter us in this process. Badran explains that the philosophy of investing in people lies on the assumption that " the continuity of human life lies in the investment in people through knowledge" (Badran, 156, 1999). He points out that such a human development approach determines the future of the development process. He argues that education and health are the main means to achieve the desired human capital. However, he believes that educational reform should not only depend on state efforts, but also promote private initiatives in this field. That is how private schools and universities would remove some of the burden from the state and would allow it to improve the quality of public education (Badran, 156-158, 1999). Thus, we can realize that the investment in education is the only means for long-term sustainable development. However, private initiatives are also important to promote liberal education and introduce new fields of knowledge to cope with the global changes.

Process of Educational Reform:

Steps of Educational Reform:

Moreover, Badran identifies some of the dimensions that the state should consider during the process of educational reform. The first aspect is the selection of the teaching staff and the assessment of their ability to lead and guide the students (Badran, 158, 1999). The teaching staff is a crucial variable in educational reform as their efficiency and dedication may really lead to improvement of educational services. That is why they should learn how to deal with students to stimulate their thinking and make the learning material attractive for them. They should also be aware of the latest techniques in teaching and be fair in their treatment of all students. Moreover, they can engage in discussions with students and allow them to express their opinions freely, instead of promoting an atmosphere of repression and submission. However, the preparation of the teaching staff is costly and a long process as the government may send them abroad to get training courses to know the latest technological devices used in the educational process and later use them in their own schools.

The second main aspect of educational reform is the flexibility and variety of the offered specializations and programs so that the students can choose among them those programs in which they are mostly interested and that are in accordance with their skills (Badran, 158, 1999). This variety would allow the state to introduce new fields, diversify its knowledge and cope with these latest specializations needed for the job market.

A further dimension of the educational reform is the "administrative liberty" or "Anti-Institutionalism" (Badran, 158, 1999). Many parents and students suffer from bureaucratic red tape that may slow down the educational process and discourage many students from continuing their education. Thus, educational reform should also free the system from the unnecessary regulations that complicate the admission and the graduation processes. That is why Badran advocates a move towards "facilitation and system perfection" that would promote education and training in an easy and attractive way for all students. In addition to that, Badran believes that the state should revise its evaluation criteria and promote equal opportunities for all students (Badran, 158-159, 1999). This fair, free and good education would provide the needed human capital with which the nation would be able to compete in the age of information technology.

Furthermore, in any program of educational reform there should be a balance between the different education programs: classical disciplines to promote religion, language and moral values in addition to the humanities, physical sciences and specialized programs. Moreover, the university should offer different options for its students, for example post graduate studies, open university, liberal education as well as colleges for community development (Badran, 159, 1999). However, when expanding to these new fields and programs, the state should not overexpand. The introduction of new fields should not decrease the quality of the existing specializations. On the contrary, it is important that the state would be required to strengthen first the existing areas and and then introduces complementary or new fields.

Challenges of Educational Reform:

Thus, we can identify five main challenges that educational reform faces. The first dilemma with which the state has to deal is the problem of capital and resource scarcity. As the state has limited resources, it usually invests in those fields that would yield quick benefits. That is why it ignores education although it promotes the formation of human capital on the long run. That is why Badran urges the state to realize that "educational capital is a long term investment". However, Badran explains that such a policy is difficult as the benefits of education are not always quantifiable and hence are less evident and less tangible than other investments (Badran, 160, 1999). I believe that the commitment of the officials to long term human development is very important in this respect as they should have a strategic view on the future of their country, instead of focusing on the rapid unsustainable economic gains or personal benefits. Hence, the real challenge is the arrangement of national priorities and the planning of long-term sustainable development rather than visible unsustainable progress.

Badran also points out to a very important aspect of educational reform. Till now we have been talking about the efforts of the state to improve the quality of education. However, according to Badran such an improvement cannot be complete without the inclusion of the civil society and its contribution to educational reform. He believes that we cannot depend mainly on the scarce state resources, but should rather raise funds from social groups that are willing to cooperate in the promotion of educational services. He believes that we should try to relief some of the burden from the state and at the same time improve the quality of education. Such an attempt would decrease the state dependence on external financial sources and would enable it to invest these resources in other productive fields (Badran, 160, 1999). In the age of globalization, the role of the state is diminishing as civil society and different social groups can take over or at least cooperate with the government to achieve the best educational performance that would benefit all social segments.

Such an approach would also help overcome many of the deficiencies of the state which focuses on details and lacks an overall view of the whole process of educational reform. Moreover, the planners of such a project should consider the fact that educational reform is a "cultural project" as it does not only provide knowledge, but also fosters our national identity , awareness of our rights and generates democratic values. Ali identifies the various criteria for a successful educational reform. He argues that it should promote change rather than defending the status quo. Productive education depends on creativity, discussion, democracy, openness and cooperation. It should cope with technological improvements and lead to an overall improvement of all aspects of the educational process. Hence, as human development constitutes the future of any nation, education lies at the core of human development (Ali, 60-64, 1998). Therefore, state efforts should be concentrated on this field as it is the main catalyst of economic, political and social progress.

Most Recent Government Educational Strategy:

It seems that finally the Egyptian government became aware of the importance of education for sustainable development. That is why the President has reviewed in February 2001 the nation's new educational strategy. As we explored the importance of educational reform and the main challenges and dimensions of this process, it is necessary that we examine this new government plan. Such a plan would not only help us identify the main problems of the Egyptian educational system, but also reveals the state's main steps to deal with these problems. The new educational strategy focuses on the quality of education as the basis for human capital. It seeks the improvement of the curricula so as to render them easier and more efficient. As for the teachers, the state would provide them with local training as well as sending some of them abroad to familiarize them with the latest teaching techniques. To cope with the cultural and technological challenges of the age of globalization, the state decided to promote secondary school education as it is the basis for morals and social values. It would also provide schools with computers so that school children would deal with information technology from an early age. That is why they would promote creative thinking to build "human capital" with independent personalities. Moreover, the state realized the need to coordinate between secondary and higher education as they are both complementary and can mutually reinforce each other (El Khradly, 15). It would also devote more attention to technical education to be able to cope with the technological changes. The expansion of school activities and fostering of talents as well as the improvement of school infrastructure would create a pleasant atmosphere for the students and enhance their performance (Al Akhbar,1).

As education is a catalyst for social mobility and equality, the government would extend and improve its educational services to upper Egypt through the creation of more than three thousand new schools in an attempt to reduce illiteracy, especially in these poor rural areas (Al Khradly, 15). The state also regards women education as a priority in this new educational strategy, that is why it would target poor and working women in rural areas and try to increase their awareness of the importance of education for their the enhancement of their living conditions and personal qualifications.

Two Case Studies of Educational Reform: Technical Education and NGO Involvement

However, I would like to point out to two main goals of this strategy and examine them in depth. First, the plan wishes to use foreign experts and the experience of other nations to build upon their achievements and learn from their programs. In this respect I would like to present the experience of Mubarak Kohl Project, which tried to improve technical education in Egypt by "copying" the German system of dual education. The second important objective, that I would like to point out, is the inclusion of NGOs to promote education and improve educational institutions. Here the experience and accomplishments of the Association for the Advancement of Education can be very instructive.

Mubarak-Kohl Project:

Why Mubarak Kohl Project?

I chose to write on Mubarak Kohl Project for various reasons. First, it focuses on technical education, which is largely neglected in Egypt. Secondly, it demonstrates the attempt of the Egyptian government to learn from other countries' experiences by adopting their educational systems and adapting them to our local environment. Thirdly, I worked in this project so I experienced the obstacles and challenges that such a project can face. Moreover, the project can be used as a showcase for a successful educational reform as it undertakes a more direct approach to human development and tries to overcome the defects of the technical education in Egypt. In addition to that, the project has been operating for more than 10 years now, that is why we can evaluate its success and its contribution to human development and educational reform in Egypt.

What is Mubarak-Kohl Project?

The project was established when the Egyptian government realized that the graduates of the technical education get only theoretical knowledge and do not gain any practical experience during their study, that is why they lack the needed skills in the job market and their productivity remains low. In coordination with German experts, the Ministry of Education cooperates with businessmen to improve vocational education and training in Egypt. It established new so-called Mubarak-Kohl schools for vocational training where the students only go two days to school to get the basic theoretical knowledge and study languages and mathematics, while in the four other days they work in a factory as trainees to gain on-the-job training during their three years of study.

What are the Aims of the Project?

Dr. Manfried Diel, the Head of the German experts, explains that the dual educational system tries to incorporate the private sector in the process of educational reform by providing the necessary training places needed for the students. Furthermore, he adds that the adoption of the German system in Egypt does not mean copying it exactly from the German example, but rather trying to adapt it to the economic, cultural as well as legal environment in Egypt. For the project to succeed the government, especially the Ministry of Education, should have educational reform as its main priority and ensure that all the schools undergo serious restructuring to be able to implement the project in them. He explains that the German experts provide advice in the technical as well as the administrative aspects of the project. The Minister of Education also stresses that the project help Egyptian students to get trained on the newest technologies while they are still at school. That is why they would be able to find better job opportunities and hence decrease unemployment. At the same time their skills and knowledge help improve the quality of the Egyptian products and enable it to compete in the global market (Mubarak-Kohl Initiative, 1, 2001). Thus, we realize that the objective of the project is not just to improve education and build skillful human capital, but also helps promote economic growth and competitiveness of the Egyptian prod-

ucts. That is how it is able to link human development and economic performance.

How did it start?

The agreement was signed between the German and the Egyptian government in Bonn 1991 and then a steering committee was established in 1993. However, the actual implementation of the project started in the new industrial cities: Tenth of Ramadan, Sadat city and Sixth of October City and then expanded in other cities later. The first class graduated in June 2000 (Bernamg…Misr, 7, 2001). It is interesting to notice that the project started in the new industrial cities to enable the students to get easier training places and at the same time to allow the businessmen there to benefit from these skillful trainees.

Mubarak-Kohl Project in Balance:

Achievements:

The Project was able during these five years (from the actual operation in 1995 till 2001) to expand to eighteen different traits in the following fields: industrial mechanics, electronics, textile, nursery, agricultural machinery, office management assistance, concrete works, ready made garment, spinning, weaving, water and gas installations and power plants. This variety enables the students to specialize in the field in which they are mostly interested in and at the same time offers different skills according to the nature of the city in which the project is being implemented. Furthermore, the number of schools involved in the project reached thirty-eight schools with currently enrolled 8400 students and 3400 graduates. Moreover, the project trained 1300 teachers and administrative staff, 450 of which were trained in Germany to know how the system actually works and try to implement it in Egypt. The commitment of the private sector is also evident as over 800 factories agreed to train the students and provide employment opportunities for them afterwards. The geographical expansion of the project to 22 cities enabled most of the Egyptian students to benefit from the project instead of remaining confined to these cities while ignoring the rural poor (Egyptian-German Technical Cooperation, 15, 2001). Hence we can realize that the project focused on the quantitative as well as the qualitative aspects of educational reform through geographic expansion, different traits and new schools while training the teaching and administrative staff to ensure the efficiency of its implementation.

Strengths of the Project:

The main strength of the project lies in the support that it gains from the business community and the different ministries. The project also has its own tests and examinations to determine the standard of the graduates and evaluate the efficiency of their training. It also tries to overcome some of the drawbacks of the "ordinary" educational system as the number of students in class does not exceed 24 and there are no private lessons for the provided courses. In addition to that, the schools are provided with all the needed materials and the labs are equipped to allow for school training and experiments. The rights of the trainee are also protected as he signs a contract with the company and gets a monthly stipend as

a pocket money besides being covered under the umbrella of the state social insurance. Even at this early age the student gets used to the actual working atmosphere offered in the factory. In addition to that, there is a continuous upgrading of the teachers and directors to familiarize them with the latest teaching techniques. (Egyptian-German Technical Cooperation, 12-14, 2001).

Weaknesses of the Project:

However, I believe that the main problem that the project faces now is the coordination between the Ministry of Education and the Egyptian businessman. As there are more than one body engaged in the administration of the project, there is sometimes an overlap or conflict in their responsibilities that may affect the efficiency of the project.

With the expansion of the project, the problem of coordination may worsen if the administrative body of the project is not strengthened and the responsibilities of each contributing parties are not clarified. Furthermore, I noticed during my visits to some of the businessmen that they are not clear about the rights and duties of the trainees as they are not normal workers and at the same time they are not school children. Hence, there should be an awareness campaign to the trainers of the students to explain the role of the trainee and what is expected from the training. Another problem that the project faces is the complaint of some businessmen that a lot of their trainees enter the university to continue their studies or shift to another factory after they have been offered training for three years in their companies. That is why some businessmen are discouraged from training the students if they would not "benefit" from them! However, others can understand that it is their responsibility to build loyalty and provide incentives for the students to stay in their factories.

Model for Educational Reform?

Thus, it is evident that the project suffers from some problems that it should try to solve and hence preserve its reputation and encourage more students to join it. Hence, we can realize that Mubarak-Kohl Project sets an entire administrative and technical framework for educational reform in Egypt that would allow the students, the businessmen as well as the whole country to benefit. It is a long-term project of human development that would allow the building of self-capacity to promote sustainability of the development process in Egypt. Besides, it focuses on technical education and industrial capacity, which would be a great asset for economic growth and competitiveness in the age of information technology.

Association for the Advancement of Education: NGOs Initiative

Philosophy of the Organization:

In an Interview with Dr. Emad Siam, the project coordinator of the NGO headed by Dr. Mona Makram Ebeid, he explains that the government efforts to improve the educational system mainly dealt with the symptoms of the problems, rather than tackling the roots of the deficiencies or trying to solve them. He adds that the elimination of illiteracy has been a national goal since 1940, but nevertheless the

absolute numbers of illiterates continue to grow, the educational services are of low quality and the number of dropouts is increasing despite the expansion of the budget and the training of teachers. Education is nowadays not only too expensive, but it is also no more a means of social mobility, as many graduates remain unemployed (Siam, interview).

Therefore, the NGO has two main foci: the right to education and the quality of this education. He illustrates that the NGO believes that education is not only the key to development, but also a basic human right that is guaranteed in the national constitution and international declarations. However, this right implies the access to good education that enables students to unfold their capabilities and shape their own future within an atmosphere of equal opportunity. Moreover, this education should enable them to participate as active members in society and learn to express their views and shape the general policies of their nation. He stresses on the importance of equal opportunity for all students as we cannot ask students to excel without providing them with the good infrastructure, teachers and curricula that enable them to get the best out of their education (Siam, interview). Thus, we realize that the NGO mainly sets two main goals to achieve them through action and advocacy. In addition to that, the NGO wishes to establish links and coordinate with the other NGOs operating within the field of education. That is how they would be able to gain more bargaining power, affect policy making and promote the whole educational process. Therefore, these NGOs exchange their experiences and are engaged in a dialogue between one another and with the decision makers in the Ministry of education to discuss the strategies of educational reform. Thus we realize that this NGO builds links with other civil society agencies to form a lobby. As a result, they do not only operate independently from the government, but also lobby to affect the basic government policies and shape their content.

Challenge of the Information Age:

As for the importance of technology in the educational process, Dr. Emad adds that the government claims that there are computers and internet in all schools, however through actual experience he realized that some schools even lack electricity or have no place to put these computers in. Moreover, if they are to find a place, they have to put the computer in one of the classes and distribute the students on the remaining classes, which again increases the density in classrooms. Ironically, even if the place and the computer exist, the problem remains that there is nobody who can train the students on it, as most of teachers themselves do not have any computer skills! Besides, one computer is usually not enough to enable all students to use it and get the required skills. Where the trained teacher is available, the computer is not used to promote creative thinking or independent knowledge by the students, but is rather as a typewriter or as a monitor to illustrate the same "monotonous" curricula that do not stimulate thinking, but stress on memorization. Furthermore, even the way they teach students how to use the computer is inefficient. They spend most of the time explaining the different parts of the computer and its functions without even showing the students how it actually

works! That is why in their final exam the students write what they have memorized and pass the test without even having been able to use the computer at all (Siam, interview).

Hence, we realize that in the age of information technology, it is not the provision of the computer that matters, but rather the culture of using technology that should be taught. Computers should not be used for games, but rather as a crucial educational device. Dr. Siam explains that the freedom of knowledge that information technology implies does not exist in schools, as the curricula do not encourage research or exploration of new knowledge. Hence, before caring about the provision of the computer, we should focus on building a student mentality that is able to observe, think, try and analyze knowledge, instead of just memorizing it. That is why he stresses on the importance of an efficient educational philosophy appropriate for the age of information technology. He believes that we should also change the "hidden" curricula that stress on obedience and submission. The main question in the process of educational reform is the role that we want these students to acquire when they graduate. We have to ask whether we want the student to become a government official who obeys blindly all the orders, or rather to be an active participant in society. We should set our aims clearly and then design the appropriate strategy to achieve them (Siam, interview).

Projects of the NGO:

The projects focus on four main problems: infrastructure, training of teachers, improving the social conditions of the students as well as promoting their social participation. One of the main projects of the NGO is the restoration of the infrastructure of about 100 schools in five Egyptian cities: Cairo, Giza, Beni Swaif, Suhag and Menia. Although they do partial changes, they focus on the provision of disks, glass, and electricity. As for the training of the teachers, Siam explains that they do not only train them on the curricula, but also on how to deal with children, understand their needs and encourage their participation. Through the organization of 190 training programs, the organization was able to train more than 4000 teachers from all over Egypt.

As the NGO cannot change the curricula, its main means to influence student behavior and socialization is through student activities and clubs. That is why it establishes at least fifteen clubs with 30 students each in every school. They provided the money and the tools needed for these activities (Siam, interview). Hence the NGO was able to tackle the main problems of the educational system through restoration of the basic infrastructure, the training of the teachers as well as the promotion of school activities to nurture their talents and improve their skills.

In addition to this educational role, the NGO is also engaged in activities that promote general human development and skills. It analyzes the social conditions of the students and tries to determine the main factors that affect their academic performance. In one school, the NGO noticed that one student comes always late and is constantly punished for that. When they investigated the case, they found out that he comes late in the afternoon period as he shares his shoes with his brother and has to wait for him till he comes from school! Other students may do

badly just because they cannot see the board or hear the teacher. As a result, the Association for the Advancement of Education decided to provide glasses, pens and other help to over 24 000 students. Furthermore, in a project in Beni Swaif the NGO tried to solve the problem of girls dropouts. They managed to help 800 girls to remain in schools by detecting the reasons for these dropouts and trying to solve these basic problems. They provided mini credit for the families of these girls and hence enabled them to improve their economic conditions through income generating projects. Most of these loans were repaid and the project even invited many families to apply for their children to the school so as to have access to these funds as long as their child remains enrolled.

In addition to that, the NGO formed a steering committee in each school consisting of the parents and the teachers to discus the main problems of the school and raise funds to solve these problems (Siam, Personal Interview). Therefore, it is evident that the NGO is not only engaged in educational reform, but rather contributes also to overall social reform and helps poor rural families to improve their living conditions. The NGO also promotes income generating activities to enable the families to become sustainable and self-reliant on the long-run, so that they can do without the NGO when it leaves. Hence it deals with the four pillars of the educational system: the teachers, the students, the institutions of the school as well the families of the students.

Another aspect of social reform beside the social activities, is the promotion of human development strategy through the so-called clubs of "children's rights". In these activities the students are trained how to defend and fight for their rights. There are awareness campaigns on their rights and the violations of these rights. That is how the students are able to detect the violations themselves and use the appropriate techniques to get their rights, for health insurance or health care. In a small village in Menia, students were able to draft a petition and send it to the Minister of Health to complain about the absence of the health care requirements in their schools. They were able to defend their rights and to force the authorities to change their policies.

These clubs are also linked to a wider project of socialization to promote civic education in Egypt. The students learn to be critical and acquire new values like freedom, ethics of time, democracy as well as the acceptance of the other and the ability to engage in a dialogue with others. This program is linked to the Center of Civic education in California and the students were able to publish a magazine called " It is our right" or "Men Hakena". Hence, these clubs and programs do not only promote the awareness of the students with their rights, but also empowers them and proves their ability to change their society through their active participation (Siam, Interview). Thus, we realize that the role of civil society goes beyond educational reform and extends to broader advocacy and awareness campaigns within a general strategy of human development and social reform.

Conclusion:

After presenting the general philosophy of educational reform and analyzing

the challenges that the age of information technology poses on us, we presented the two case studies to illustrate that change is possible but requires commitment and active participation of all social segments. The example of Mubarak-Kohl illustrates how education can promote economic growth and meet market needs through the cooperation of the business community with the government. It also demonstrates the importance of policy borrowing and building on other nations experiences after adapting them to our own social and economic systems. Moreover, the case of the Association for the Advancement of Education shows how the work of civil society is significant for educational reform and social change. The network of the NGOs and its ability to lobby the government stresses on the major role that civil society agencies can play when they combine their efforts and coordinate their programs. The projects of the NGO dealt with the roots of the problems and analyzed their causes very carefully before designing a strategy to solve them. They also enhanced self-reliance and self-help and participation to ensure the continuity of these reforms. However, I believe that the most important role of the NGO was the link between educational, social, economic as well as human development that it was promoted in its projects. Such a combination of strategies show the interconnectedness of these areas, that is why the promotion of human development requires not only a change in education, but also an adaptation social values and economic conditions that would all together boost overall development of the nation.

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II. Egypt's Education Development Project

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"Children ought to be educated, not for the present, but for a possibly improved condition of man in the future."[1]
- Immanuel Kant

Every modern, vibrant state believes in education as a potent instrument of social change. In fact, it is relatively difficult to envision a current modern state that is politically influential, economically productive, culturally inspiring, scientifically advanced, and militarily dominating that hasn't allocated substantial consideration to education. The prevailing view among modern states is that education represents not only the cornerstone, but more importantly the spinal cord of civilization, society, and humanity at large. In the modern world, education has not only been assigned to integrate young individuals within their respective societies, but has rather been geared towards creating citizens that are contributing, effective, and serviceable to community. Egypt has tried to find a place within this world.

Since November 1992, Egypt has embarked on an unprecedented attempt in its extensive history to revolutionize its educational structure, principles, and philosophy. The Egyptian government launched the *Education Development Project* or known in Arabic as *mashroua tatweer el taleem* with a view to completely replace a decayed, failing educational system with a modern, effective one. This comprehensive project has ever since been sponsored and managed by Egypt's Ministry of Education tackling various components of schooling including curriculum development, introduction of technology, development of school infrastructure, and promotion of teacher skills. Egyptian officials conceived that without an enormous investment within Egyptian education, the future of the country would likely be disappointing. The conclusion was reached that sustaining Egypt's political weight, economic growth, and cultural influence rested and depended largely on new generations that were erudite and that "a society that takes education seriously and cares enough about it to give it the priority it deserves, is on the way to becoming a better society."[2] The *Education Development Project* was thus, the mechanism to translate this vision into reality. In his address before the People's Assembly and *Shura* (Consultative) Council on November 15th 1992, the Egyptian President provided the guidelines for this comprehensive reform program of education in Egypt which later culminated in a final detailed report under the name "A View Towards the Future," which laid both the groundwork and details of the project. Ever since the launch of this project, a series of national conferences, un-

der the auspices of Egypt's first lady, were held with the aim to follow-up on the progress being made. "In 1993, the National Conference for Curriculum Development in Primary Education was held. In 1994, the National Conference for Curriculum Development in Secondary Education was convened. In 1996, the National Conference for Teaching was also organized. In 2000, the National Conference for Talented Students was held."[3] This paper will thus, attempt to present and analyze the noteworthy changes this project brought to Egyptian education and students while also pointing out its deficiencies.

Curriculum Development

Curriculums in Egyptian public schools have over the years been sharply criticized for their length, information density, and difficulty to absorb. It was clear before 1992 that the quantity of school textbooks prevailed over quality. They were generally perceived as poorly written, inadequately structured, and ineffective in transmitting knowledge and comprehension of the real world to young Egyptian students. On top of that, the students became victims of an educational system that stressed memorization rather than understanding. School textbooks ended up being a series of unattractive papers that were stuffed with information to be learned by heart. Experts in education as well as other officials within the government reached to the conclusion that curriculums in Egyptian schools had failed in their missions. Kieran Egan, author of The Educated Mind, advocates that "curriculums should aim at preparing students as adequately as possible for the life they are likely to lead. It focuses on developing the skills and knowledge that are relevant to real life outside the school. The curriculum is responsive to changes in society and other conspicuous features of the social life students are entering."[4] From his part, M.V.C. Jeffreys, author of Education: Its Nature and Purpose, states that "when we consider the content of the curriculum, we have to notice a tension between direct experience and formally organized knowledge. On the one hand, it is obvious that life-experience does not come to us neatly packaged. In the street we do not encounter history, geography, chemistry, and mathematics. For the student, subjects exist only in school, whereas in life things just happen. For the student, this distinction between actual life and subjects is perhaps the basic distinction between the world and school. It is not surprising that educators have been troubled by the gulf between learning and living, and have explored ways of making the school curriculum more real to the children."[5]

The *Education Development Project* as a result, tackled the issue of curriculum development with the hope of channeling a new concept completely different from that of stuffing students with information and facts, a new concept that would help students acquire both skills and capabilities that would enable them to fulfill duties towards their society. As a result, several developments in Egyptian curriculums took place which included:

Qualitative Expansion. The quantitative expansion of education was replaced with a qualitative one. Minimizing both the number and size of school textbooks, which overburdened students took place while special stress towards the layout of school textbooks was also emphasized. Relieving students from the burdens

of studying expansive books compressed with information was an attempt to encourage students not only to become more willing to conduct actual studying, but also create more free time to carry out other extra-curricular activities including sports, music, art, and social service.

Emphasis on International Topics. Within the general program of reforming school curriculums, the project sought to introduce different new topics within the general curriculums of public schools that were of international concern. Some of the topics included "environmental awareness, the issue of gender and the role of women in societies, human rights, information technology, racism, conservation of resources, globalization, and other issues related to national security including, terrorism, extremism, and addiction."[6] Other topics that were of particular concern to Egyptian interests that were also introduced included "population explosion, traffic awareness, and health sanitation."[7]

Deleting Redundancy. Ruling out redundancy was part of the attempt to develop school curricula in the different educational stages. They have been continuously reviewed in order to rule out all forms of repetition. The "Ministry of Education has eventually ruled out about 15.2% of school curricula since the academic year 1991/1992."[8] Deletion of redundancy within school curricula has been a sustained process implemented by competent education experts, professors, officials in the Ministry of Education, and members of the Teachers Syndicate.

Understanding Versus Memorization. New school curriculums were also designed to turn students away from the long-witnessed phenomenon of memorization and spoon-feeding to a form of positive education in which students would actively participate in the educational process that would provide them with the ability of self-learning. Over the years, memorization led to the formation of apathetic mentalities and receptive behavior. Students became programmed according to the methodology of absolute facts, which resulted in creating new generations finding it difficult to accept counter views. Officials within the Ministry of Education therefore, attempted to replace memorization with comprehension and understanding as Montaigne says "knowing by heart is no knowledge; it is merely a retention of what has been given into the keeping of the memory. What we really know we can make use of without turning to the model, without turning our eyes to the book."[9] Furthermore, Nigel Blake's Thinking Again: Education After Postmodernism stresses that "the now familiar distinction between surface and deep learning connects with aspects of method and content. Surface learning treats everything as not relatable or anchorable, concentrating on memorizing bits of information. Deep learning aims at understanding meaning by relating it to established ideas. There are facts and there are thinking skills. Facts become meaningful when thinking locates them in cognitive structures."[10]

In the process of curriculum development however, the Ministry of Education has repeatedly stressed that certain main features and themes of the curriculum remained untouched that were primarily perceived to be related to the security of Egypt which included:

- Deepening student's affiliation to Egypt, its history, civilization, affirm-

ing and upholding national loyalty.
- Stressing faith, religion, divine and social values, and respecting other creeds, sanctities, and rights.
- Participating in the achievement of political stability and social peace, affirming national independence and affiliation, forming a democratic society, and emphasizing the importance of self-sufficiency.
- Establishing scientific thinking, information analysis.
- Dealing with 21st century challenges, foremost of which is the introduction modern technology.
- Acquiring the ability to participate efficiently in collective work to realize the relationship between right and duty within the framework of freedom and democracy.
- Encouraging free, simultaneous, and organized activity and the desire to discover self-esteem.

In all however, it seems that curriculums in Egyptian schools have attempted to strike a balance between the preservation of national culture and keeping up with global developments. Hirsh Jr. advocates in Cultural Literacy that "withholding traditional culture from the school curriculum, and therefore from students, in the name of progressive ideas is in fact an unprogressive action that helps preserve the political and economic status quo. Providing children with traditional information by no means indoctrinates them in a conservative point of view. Conservatives who wish to preserve traditional values will find that these are not necessarily inculcated by a traditional education, which can in fact be subversive of the status quo."[11] M.V.C. Jeffreys adds in his book Education: its Nature and Purpose that "in societies where change is, or was, very slow, or where life is so hard that survival is a main concern, the function of education must be conservative, either because change is not expected, or because conservation is in itself a difficult enough achievement."[12]

Development of School Infrastructure

The *Education Development Project* was similarly concerned with the problem of poor school infrastructure. According to the 2001 Report of the Ministry of Education, "in 1991, almost half of the total number of schools in Egypt weren't suitable for operation."[13] It is for this reason that the project set forth an ambitious plan to develop the entire infrastructure of Egyptian schools. The plan included the construction of new buildings, the replacement of schools, and the rehabilitation of others.

Construction of Buildings. In order to obtain a complete picture of the exceptional importance the project has placed to this sector, it is important to mention that "between the years (1882 – 1991), 6,092 schools were constructed in Egypt. Between (1992 – 2001), 11,228 schools were built, which means that in exactly 10 years, the government had built almost double the number of schools that were constructed in almost a century."[14] This notable increase in school construction

was directly the result of Egypt's troubling population explosion. The shortage of schools did not only deprive young Egyptians from receiving a proper education, but also hampered effective education in other schools, since other schools were forced to receive these large numbers of students, to the extent that some classes in some desperate areas "reached to 100 students per class"[15]. Furthermore, the Ministry of Education was forced to organize evening shifts for students, in which students had to start their school day at three in the evening, after the first morning shift would have been completed. "It is expected by the year 2017, that Egypt will be in need of 39,903 schools to cope with the current rise in population."[16] The costs of construction of school buildings in the last 10 years have amounted to "approximately 13 billion Egyptian Pounds."[17] New schools have been equipped with primary school facilities including libraries, computers (albeit relatively minimal), and a medical room.

Maintenance of Buildings. Besides construction of schools, other plans were designed to conduct reparations of buildings. Numerous Egyptian schools had over the years suffered from long neglect. Several schools even posed dangers to the lives of many students. Accordingly, the project "planned immediate maintenance to 3000 schools a year from the period 1992-1997 allocating approximately 150 million Egyptian pounds a year for these operations (refer to figure 1)."[18] Furthermore, greater attention to the maintenance of school buildings was given as a result of the damage created by the October 1992 earthquake which hit Egypt. "A total of 4,820 schools were repaired as a result of the earthquake, which served as an additional financial burden on the government."[19]

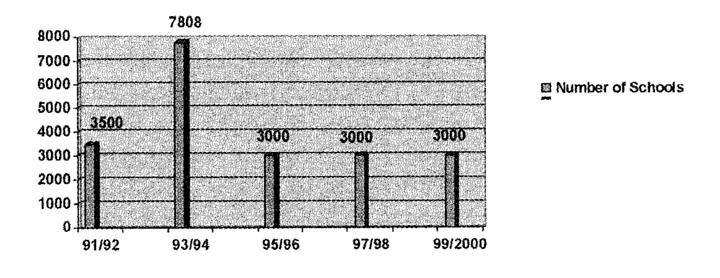


Figure 1
Number of Schools receiving maintenance and reparation from the period 1991 – 2000

Demolition of Buildings. In several other cases, the Ministry of Education had no other choice but to demolish schools due to the deteriorating conditions of the buildings, which were a source of danger to the lives of students. Consequently, the Ministry of Awqaf provided large portions of land that were used to rebuild the schools.

Introduction of Technology

One of the most important features of the *Education Development Project* is the introduction of technology, particularly attempting to introduce computers to Egyptian schools. Faced with the global trend of modernizing education, the Ministry of Education has exhibited great interest in introducing relevant technology in the education process including computers, Internet, videoconferences, and distant learning. "As of 1999, approximately 17,000 schools were developed of which 1,200 were in kindergarten stage, 8913 in primary stage, 5,718 in preparatory stage, and 1,169 in secondary stage."[20] Figure 2 illustrates the number of schools that were technologically developed in some of the prominent Egyptian governorates.

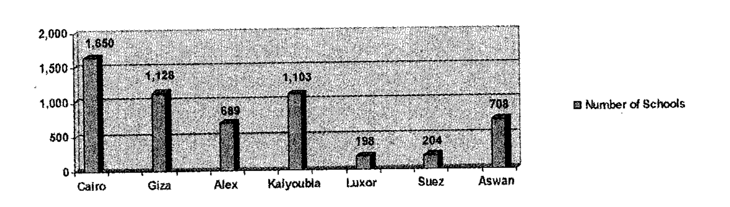


Figure 2
Number of schools that were technologically developed in some Egyptian Governorates in 2001.[21]

Although in some Egyptian schools only one computer was provided as a result of computer hardware shortage, the project has nevertheless been relatively effective in making such equipment available to students. As M.V.C. Jeffrey mentions in Education: Its Nature and Purpose, "more recent is the era of educational technology the hardware explosion of programmed learning, teaching machines, video-tape and the rest. These devices can be of great educational value. There are things that teachers used to do which can be better done by machinery."[22]

Other important statistics similarly reveal some of the progress made in the information technology sector in Egyptian schools. In some rural areas, schools have possessed only one computer for the entire school to share in which a rotation policy among students was conducted. "In 6,000 schools across Egypt which only possessed one computer, a second computer was delivered. Furthermore, in 1,293 schools two computer labs were also built.[23]

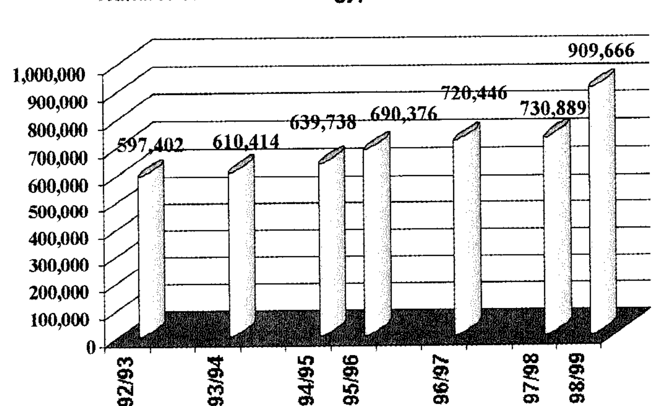
Furthermore, it is important to mention that over the recent years, Egypt has launched seven specialized educational channels on the Egyptian Satellite Nilesat with an "approximate transmission of 12-18 hours per day for each channel."[24] The first channel is for primary education, the second for the preparatory stage, the third for the secondary stage, the fourth for technical schools, the fifth for illiterate people, the sixth for foreign language instruction, and the seventh for

teachers. These channels have played a significant role in aiding students with their studies ever since the beginning of transmission in November 1998. The impact of television and its importance in the education process is reflected in Kieran Egan's The Educated Mind when he states that "if we want to let the nature of the child to develop as fully as possible, we will constantly defend him or her against the shaping pressures of society. An aspect of this conflict is apparent today in many educators' attitudes to the general influence of television on children. TV is a powerful instrument in shaping a set of prominent social norms and values." [25]

Several international organizations have also extensively assisted Egypt in the field of information technology. Among some of the most important of these institutions have been the United States Agency for International Development (USAID), the Canadian International Development Agency (CIDA), the United Nations Children Education Fund (UNICEF), the Islamic Scientific Educational Cultural Organization (ISESCO), and other states such as France and Japan that have signed bilateral agreements with the Egyptian government to help in the establishment of multimedia laboratories, employment of distance learning, and the general establishment of a computer network in the fields of education.

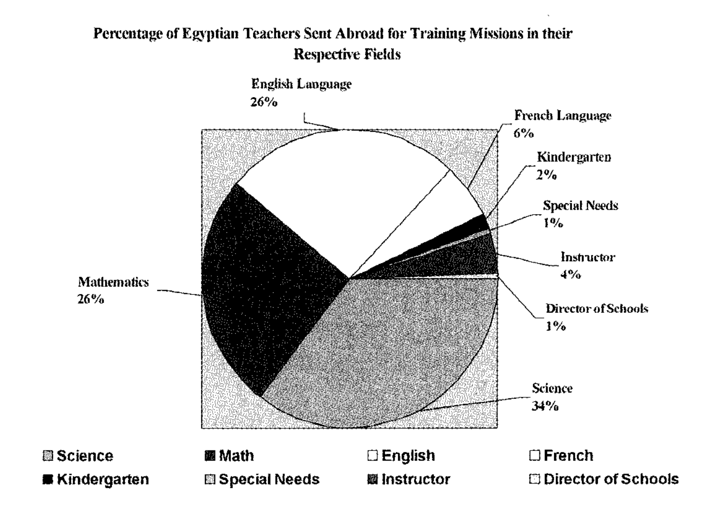
Promotion of Teaching Skills

In Warren Martin's New Perspectives on Teaching and Learning, the author states that "teachers choose the subject matter, the teacher chooses what will be taught, the teacher uses methodology, strategy, and tactics, in other words, how to proceed, the teacher chooses the timing, the sequences, the specific chronology of events, in other words, when things will come together to form the basis for choice. The teacher chooses and the teacher acts and working with the student, helps the student develop a capacity for choice and action. Commitment to this skill, to this service, needs to be kept in mind as we assess the methodologies of the teaching profession."[26] Needless to say, teachers represent the backbone of education. They can either stimulate, encourage, and inspire students, or depress, discourage, and deter them. It was for this reason, the *Education Development Project* tackled the issue of promoting the skills of Egyptian teachers. The following figure illustrates the notable increase in the number of Egyptian professors from 1992 – 1999.



Promoting the status of Egyptian teachers took several forms including:

- Providing "a 25% increase in the basic salary of Egyptian teachers since 1999."[27]
- Presenting "a 100% increase in bonuses for school directors within the different stages of education."[28]
- Providing different social services to teachers including medical care, social insurance, and membership to the Egyptian Teaching Syndicate.
- Organizing foreign training missions for teachers to be briefed on the different systems of education adopted in different states. In fact, the 2001 Report published by the Ministry of Education reveals that between 1993 and September 2001, "8,314 teachers have been sent abroad to receive training programs in different countries which included the United States, the United Kingdom, France, and Ireland."[29] Three missions a year have been systematically organized in the corresponding months of January, April, and September. The chart below provides a more detailed account of the percentage of teachers that were sent abroad for foreign training missions in their respective fields.



Conclusion

Egypt's comprehensive reform program embodied in the *Education Development Project* has provided notable contribution to the general standard of Egyptian education. However, the results of this project have seemingly been lost in the midst of Egypt's worrying population explosion. The systematic increase of Egypt's population continues to serve as an enormous obstacle towards greater education reform. Furthermore, albeit the Ministry of Education receives the second largest portion of Egypt's annual budget, the question of finance and funds also serves as an impediment for further growth. It also needs to be stressed, that expansion in terms of quantity should not be at the expense of quality in education. Hundreds of new schools have indeed been built, yet the quality of education students receive continues to remain an open question. Dependence on the support of international organizations and donors will thus, be indispensable to the future of Egypt's education.

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III. Children's Islamic Computer Programs:

Multimedia Tools to Educate Belief

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In his often cited piece "The Medium is the Message," H. Marshall McLuhan states that, "The spiritual and cultural reservations that the Oriental peoples may have toward our technology will avail them not at all" (cited in Starrett, 1998: 87). Just what reservations McLuhan might have been referring to here regarding Muslim "Oriental" peoples is perplexing. From nineteenth century European educated elites who used modern newspapers for organizing reform movements to contemporary activists in Saudi Arabia who use fax machines to disseminate anti-establishment *fatwa*s and treatises (Eickelman and Anderson 1999: 3), Muslims with access have been highly responsive to the possibilities of communication and education through new media technologies.

This has especially been the case in contemporary Egypt, where since the 1970s and the inception of what is understood as the *sahawat al-islamiyya* ("The Islamic Awakening"), media technologies associated with explicitly religious messages have proliferated. Both state and non-state aligned groups and individuals have participated in this proliferation, a process coincident with Egypt's continued engagement with modernization projects. Thus, rather than representing contemporary Islam and modernity as antagonistic—a portrayal popular in Western media—it would be more accurate to understand the often complex relationship between modernization of the means of technologically advanced forms of communication in Egypt and the *sahawat islamiyya*. Some of the communication technologies contributing to the "Islamic discourse" derivative and formative of this relationship are print media that offer Islamic doctrine in a vernacular idiom (Starrett, 1998: 209-212), audio cassettes of live taped *khutab* (sing. *khutba*, sermons) (Hirschkind, 2001) and television serials (*musalsalat*) which, to quote a prominent anthropologiest, "play an important part... [in] the contest over the place of Islam in social and political life" (Abu-Lughod, 1993: 494). All of these communication technologies serve purposes of "educating" the public (or publics) and have reached a prolific level of popular dissemination, level of dissemination that another anthropologist labels the "political economy of religious commodities in Cairo" (Starrett, 1995). At the same time, in the words of two other anthropologists, these technologies "occupty an interstitial space between the super-literacy of traditional religious specialists and mass sub-literacy or illiteracy" (Eickelman and Anderson, 1999: 9).

Also falling into this new interstitial space based on both its substance and its process of use are Islamic computer programs geared towards children. Though there is a growing anthropological literature on Islam, Islamic discourses and the

internet (Anderson 1999 and Alterman 1998) there are, to my knowledge, no studies dealing with Islamic computer programs, nor specifically with those intended to be used by children. In this study I will discuss two of these programs, *Arkan al-Iman* (Pillars of Faith) and *Hadayqat al-Anashid* (Garden of Hymns), both produced by the Kuwait based Ibda Software which has Egyptian offices. After describing and demonstrating a small portion of the contents of the programs I will briefly consider how these programs fit in the larger field of media technologies (which always serve an educational purpose).

Here I have activated the program *Arkan al-Iman*, which is interesting since it has parallel programs in Arabic and English, extending its capacity to educate young Muslims far beyond the geographical limits or the Arab world or even the linguistic limits of its diaspora. [demonstration of one function in English and Arabic (so as not to alienate completely non-Arab speakers in the audience)]...

Now for a taste of another program I will open *Hadayqa al-Anashid*, which is full of pre-recorded and video matched hymns which thematically cover important Muslim ideas, events and personalities while encouraging users to memorize the words of the hymns with a text option (which doesn't work properly on my computer). [demonstration of one hymn]...

Interactivity is apparent in these programs. While offering a limited field of information they still allow the young user the opportunity to choose what to learn about next. Needless to say this is not an opportunity children normally have the various types of schools in Egypt—all of which except for some private foreign language schools make religious education compulsory from primary school on (Starrett, 1998: 105). The programs presently under examination would likely be aimed at children up to seven years of age. This is a period in which, according to an anthropologist, Egyptian Muslims tend to emphasize *taqlid* (imitation) in the religious upbringing of their children (Starrett, 1998: 101); it is a span in which, as a writer in the NDP's weekly Islamic magazine *al-Liwa' al-islami* (The Islamic Standard), "cultivation of faith in the human psyche" should be emphasized (quoted in Starrett, 1998: 103).

These points are both confirmed and challenged by the children's computer programs under discussion. For users, both of these programs cultivate faith not only in Allah, but also in the entire discourse of Islamic history and culture that will be further elaborated over the course of their educational and interpersonal development as young Muslims. At the same time, the very idea that the family is the focal point for the young child's development of religious ideals in imitation of his or her parents is in fact not so simple to untangle from the increasingly "mediated" space in which especially middle- and upper-class Egyptian families occupy, a mediation that these programs augment. I do not suggest that these programs offer an alternative to inter-generational religious socialization—luckily we seem not, even in the United States, to have reached such a state of dystopia in which machines and data are completely responsible for the moral development of children. However such programs do add another dimension—and an interactive one at that—to the possible modes through which children receive religious information, as well as strengthening the authority or authorities which

gain discursive power from that information's transmission.

While it is possible to imagine parents completely leaving their children's religious socialization to these programs, the more likely scenario is that young Muslims will continue to receive religious information from a number of sources, including their parents, schools, and increasingly from electronic media. Computer programs are but one normalizing medium in this field. Regarding young Muslims, the strategic aims of the *Markaz al-Nur* (Light Center), the sponsoring organization of *Arkan al-Iman*, for example, are the same as those of any *kuttab* (religious primary school) regarding its young students: memorization and proper recitation of the Qur'an, reverence for Islamic obligations (*ahakam al-islami*) and morality, and knowledge of the biographies of the Prophets and the Companions of the Prophet Muhammad. Like many other influences on young Muslims' lives, these programs are laying the groundwork for normative belief. At the same time, however, they offer children the opportunity to learn while making choices, which in itself changes the very structure in which such normativity functions, disqualifying authority from dictating both the content and the time, space and order of reception.

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IV. Children's Cultural Education Project

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Introduction:

Children, the future youth and the future of the country, need special attention and education to empower them to build and develop their own character and accordingly their society and country. Most of the children nowadays get their knowledge mainly through academic learning and their entertainment mostly through the computer and the television. The cultural education is as essential as the theoretical academic education and the knowledge of information technology. Children need to get their experience and knowledge practically by visiting, seeing and participating. The knowledge and the information children get by visiting a certain area or attending a cultural event provides them with deeper understanding and greater impressions than what they get only by reading a book or watching a CD Rom representation.

The paper presented here is a primary study of a practical cultural knowledge project for children within the range of 12-14 years.

School education and system:

The school education system offers curricula that aim at increasing the scientific, historic and linguistic knowledge of the children. Some curricula offer valuable theoretical information concerning the children's own culture as well as general knowledge about other areas of the world, nevertheless problems lie in the following:

- the children are often loaded with studying material that provides them with little free time to participate in any extracurricular activities
- school trips are a very important element of the school education, but a small number of schools offers such trips. Also in schools where trips take place, the children are often taken to well known areas that they can easily visit with their families or to areas where they can spend a nice day. What lacks is the addition of knowledge and experience to children through such trips.
- Attention is often given to the grades the children get and not to their interests and hobbies.
- A small number of schools drive the children's attention to cultural events and teaches them how to appreciate culture.

Therefore one of the aims of this project is to drive the attention of many schools and parents to the importance of cultural activities and give them basic guidelines how they can incorporate that in their programs.

Entertainment:

Entertainment is a very important element in building the child's character and behavior.

Means of entertainment are numerous. The most common means by which children entertain themselves nowadays is by watching TV, playing computer games or using the internet.

A constant decrease in drawing, playing music, going to the theatre, practicing sports and physical games can be noticed in all social levels. Few children participate in cultural events and activities.

Examples of the country's efforts in the cultural field:

In Egypt there are numerous cultural events taking place; exhibitions, music concerts, lectures. Some of these events are organized by the Ministry of Culture, by international centers, by universities and private enterprises.

A cultural effort from the country targeting children as well as young people and adults is the "Reading for All" project that provided readers with moderate priced books of various and different fields and authors.

One division of the "Reading for All" project that is directly targeting children is the "National Competition for Children" which is a cultural activity aiming at increasing the interest of the children in culture and in knowing more about their country and history by practically participating in the competition and using their knowledge and creativity to win.

It is worth noting here that the problem does not lie in the lack of cultural activities and possibilities but in the lack of interest. Egypt as a country is full of history, of traditions, of stories, and just by walking and visiting areas one acquires a lot of knowledge and experience.

Learning and Entertainment Techniques:

One of the problems that leads to the lack of cultural knowledge is the means of education and entertainment. The theoretical means of education do not help the children in clearly understanding the subject matter. The constant use of computer and games whether for learning or entertainment, make the children lose the interest in primitive basic games and research methods. As mentioned earlier, children need to get their knowledge and experience by practical learning. Children's knowledge and experience is widened when they go on site visits to historic areas, the country side, etc. as well as cultural events such as concerts, exhibitions, theatre plays. This practical experience provides the children with a new dimension to their information as well as to the methods they use to learn and conceive their knowledge.

I hear and I forget
I see and I remember
I do and I understand

Chinese proverb

The project[1] :

The problem and aim:

To summarize the basic problems that this project aims at reducing:

- the lack of interest in cultural activities.
- the theoretical and technological means of learning.

So, the project aims at increasing the awareness of the importance of the **practical** cultural education.

The plan:

In Egypt there are numerous organizations that work with children. These organizations have different interests, goals as well as working techniques. The aim of these organizations is nevertheless almost the same: Providing the children with more awareness and experience. So, no matter what the interest of the organization is, the children widen their knowledge in one or more fields.

Appreciating the effort of these organizations and with the understanding that one has to continue on what exists, this project aims at contacting these institutions and organizations and providing them with a practical experience for their children. This would give them an example and more ideas on how to increase the practical cultural awareness of the children and on the other hand will provide the project with valuable information and experience that would provide the project with the possibility of forming such an organization.

Practical experience of the project:

Walking Tours to AUC community

Two "Walking Tours" were provided to interested individuals in the AUC community. One was to the Mu'izz street in Islamic Cairo and one was to Coptic Cairo and Fustat. The individuals that participated in those tours came from different backgrounds and nationalities. But what was interesting to note was that some of the Egyptian participants who have been living in Egypt for all their lives have never visited those areas and some of the foreigners who have been living here for months didn't as well; this is not meant as criticism but on the contrary; those young people and adults did not deny the fact that they haven't been to those areas and they planned their time to be able to participate in such an activity. Others who participated in those tours have been to those areas but wanted to learn more information about those areas as well as sharing with the group the information they have as well as participating in the discussions that take place during those tours that turn out to be beneficial to all participants as well as the tour leader.

Walking Tour to Boy-Scouts group

A direct practical experience to the project under study wasa Walking Tour to a group of boy-scouts in Islamic Cairo. They were provided by their leader with questions that they were expected to solve during their tour.

What was noted from this tour is that:

- All the boys were for the first time visiting this area[2].
- The degree of interest in acquiring the knowledge was different from one boy to the other.
- The children's understanding for the importance of such a tour is not a direct one but an indirect one that might have an effect on decisions they take after a couple of years in their future lives.
- Providing the children with questions or something to solve is a challenge that makes them more attentive and ask questions.
- Preparing such tours for children is more challenging than when prepared for young people and adults because it requires more creative techniques to get their attention and to get them interested in what they see and visit.

Such practical cultural walking tours for children are one aspect of the project that will be offered to other institutions and organizations. Beside the benefits that the children as well as their leaders will gain from such tours, they provide the project itself with more experience concerning dealing with children and can be considered as a research phase for the project to form an organization on its own.

Walking Tour to Girls from the German School

A group of girls (Age 14) were taken by the school to a Walking Tour on al-Mu'izz street. Joining the girls in the first part of the tour, they were given some historical background about the area, and through the walk some of the monuments were explained to them, drawing their attention to the history of the building, the builder, and also the architecture and decoration of the building.

What was very important during the tour was to make the girls interact with the community members. Those girls are somehow isolated from the community and do not have direct contact to different class members of the society. During such a tour it is not only important that the girls increase their knowledge about the history of their country, but it is very important that they interact with people from different social standards, get to talk to them and know them and deal with them. This is also a very important and real knowledge of one's own culture and country.

Plans of the Project:

Project for the German School

After the walking tour with the students from the German School, the school showed interest in participating in this project. They were submitted the project's aim and plan in order to be applied during the academic year 2002-2003.

The plan of this activity will be offered to students aging 13-15. They will be required to attend 1- a monthly field trip to different areas within Cairo and in the outskirts of Cairo and 2- a meeting of 1 hr. 45 min. where numerous cultural and social topics will be discussed; these meetings aim also at providing the students with projects or little assignments that they can do and then discuss them and follow them up.

The Service Learning Program at AUC

The AUC is starting a Service Learning Program. This project may be incorporated or expand in one of the Service Learning Courses in AUC. The idea of the project is to contact professors teaching Islamic Art and Architecture and ask them to add an additional (non requirement) activity to the course which is related to the "Children's Cultural Education Project". This activity requires from the students to take children (for example on two trips) to the areas and monuments they are studying. This will on the one hand enhance the student's understanding of what they are studying and also with a service learning activity and on the other hand provide the children with well educated knowledgeable leaders to explain them the places they are visiting.

This idea is not yet officially presented to the "Service Learning Program" at AUC but it is aimed at doing so before the Academic year 2002-2003.

Organizations and Institutions

As mentioned earlier, there are numerous organizations and institutions working with children. Some of these institutions were contacted and it is planned that they incorporate in their program one of the walking tours provided by the project as part of their program.

Conclusion:

Believing in the increase of the value of knowledge and of practical experience, the project aims at starting with the schools, institutions and organizations already working with children and then widening the project.

There are numerous other aspects that can be added to the project that can make of this project a national cultural project. Nevertheless it is desired to start on a smaller scale but with a constant gradual increase.

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[1] After the presentation given in the Sasakawa Symposium, some of the audience asked about the initiator of this project. This project is initiated and conducted of by the writer of this paper; nevertheless in the future it is aimed at increasing the project's activities and accordingly members conducting the project. This will be discussed further in the paper.

[2] The leaders of the group were taken before the walking tour to the same area. It was the first time for them there as well. ▪